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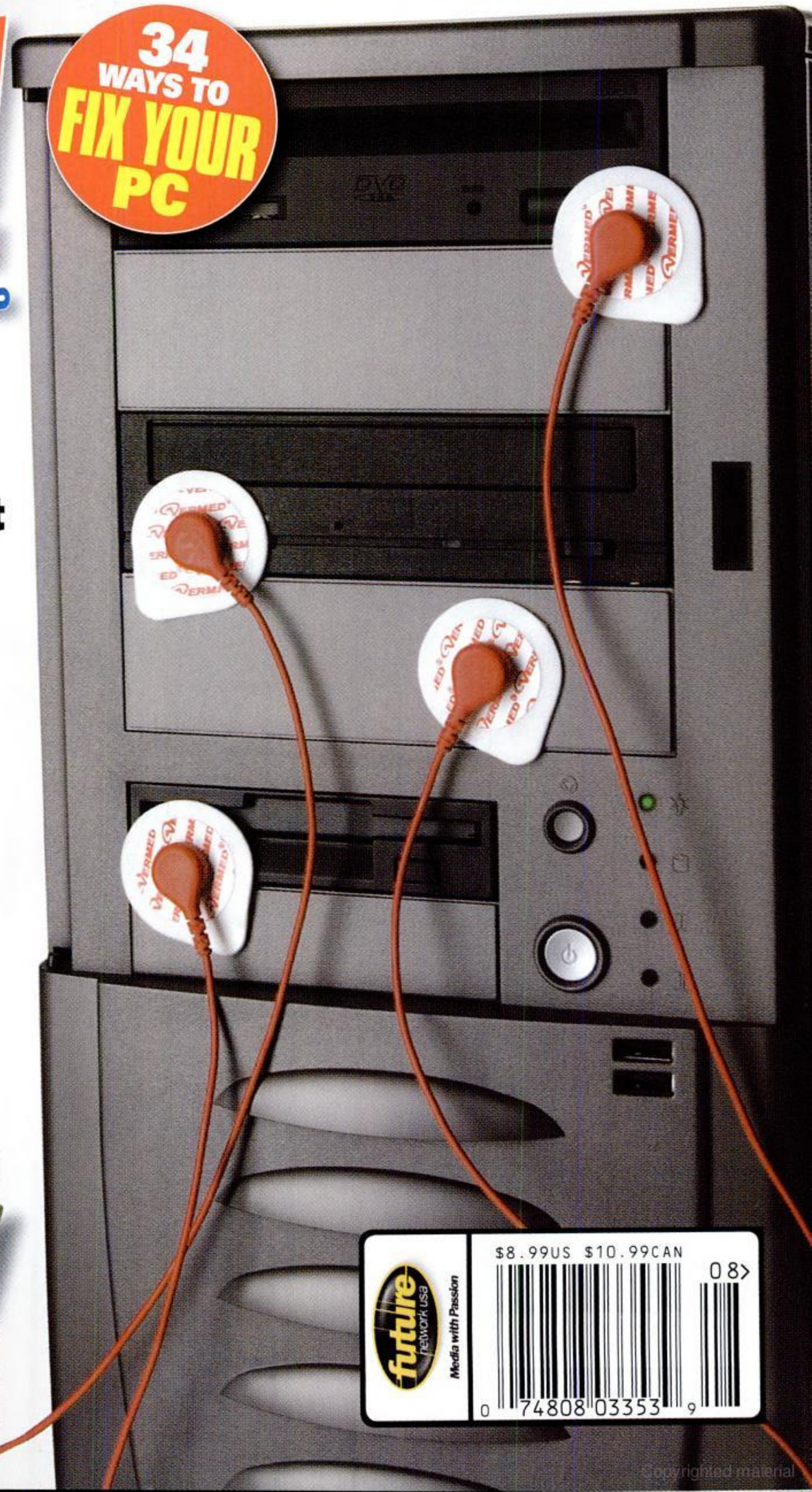

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Release Notes

The Ultimate Tip

I just finished writing my very first book, and man, are my fingers, hands, and arms tired.

The tome is called *Maximum PC 2005 Buyer's Guide* and will be in book stores and on Amazon.com at the end of the summer. The goal of the book is to help you make the smartest possible decisions for all of your PC component purchases. We do this by detailing how the *Maximum PC* editors test and evaluate products in each of 13 different categories: mobos, videocards, hard drives, prebuilt PCs, etc.

The book takes a look back at the last 12 months' worth of innovations and changes in each PC component category. Not surprisingly, this presented several challenges. While product groups like PC speakers changed very little, other categories like videocards, hard drives, and CPUs, changed considerably.

I have a newfound appreciation for the writers of contemporary historical nonfiction. Several times during the course of writing the *2005 Buyer's Guide*, I had to go back and make wholesale changes and/or additions. As an example, right when I finished the chapter on CPUs, Intel announced sweeping changes to its short- and long-term strategies for its CPU designs. D'oh! (By the way, for an interesting and alternative perspective on these changes, make sure you read Tom Halfhill's Fast Forward column on page 14.)

I also gained tremendous respect for my upper extremities. Publishing a magazine by day and writing a book by night definitely takes a toll. About a month ago, my right inner elbow started burning and then going numb after about four hours of work. I've suffered torn ligaments that hurt less. My doctor diagnosed the problem as the geek's equivalent of tennis elbow. The cure? Ice, Advil, and less time in front of my PC. As if!

Ultimately, I did follow his advice, and the pain has subsided, but the whole experience left me feeling extremely humbled. After all—and if you're reading this magazine, this probably applies to you, too—if I were to lose the ability to use my arms, my life as I know it would be over. Even more humbling, my doctor told me that over the next five to 10 years, he, along with doctors everywhere, expects to see an "epidemic" of repetitive stress-related injuries.

So, while you'll find a plethora of useful PC fix-it tips in our "Ultimate Troubleshooting Guide" on page 22, my tip is slightly more human: Whether you're playing games, writing e-mail, or programming, make sure your posture is ergonomically correct, and that you take frequent breaks. Humans aren't like PCs—when we break, we often stay broken. And, for the time being, it's impossible to buy a new body.

—GEORGE JONES
george@maximumpc.com

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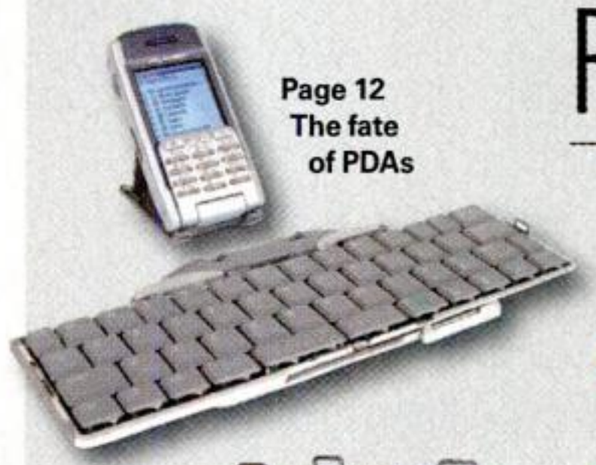

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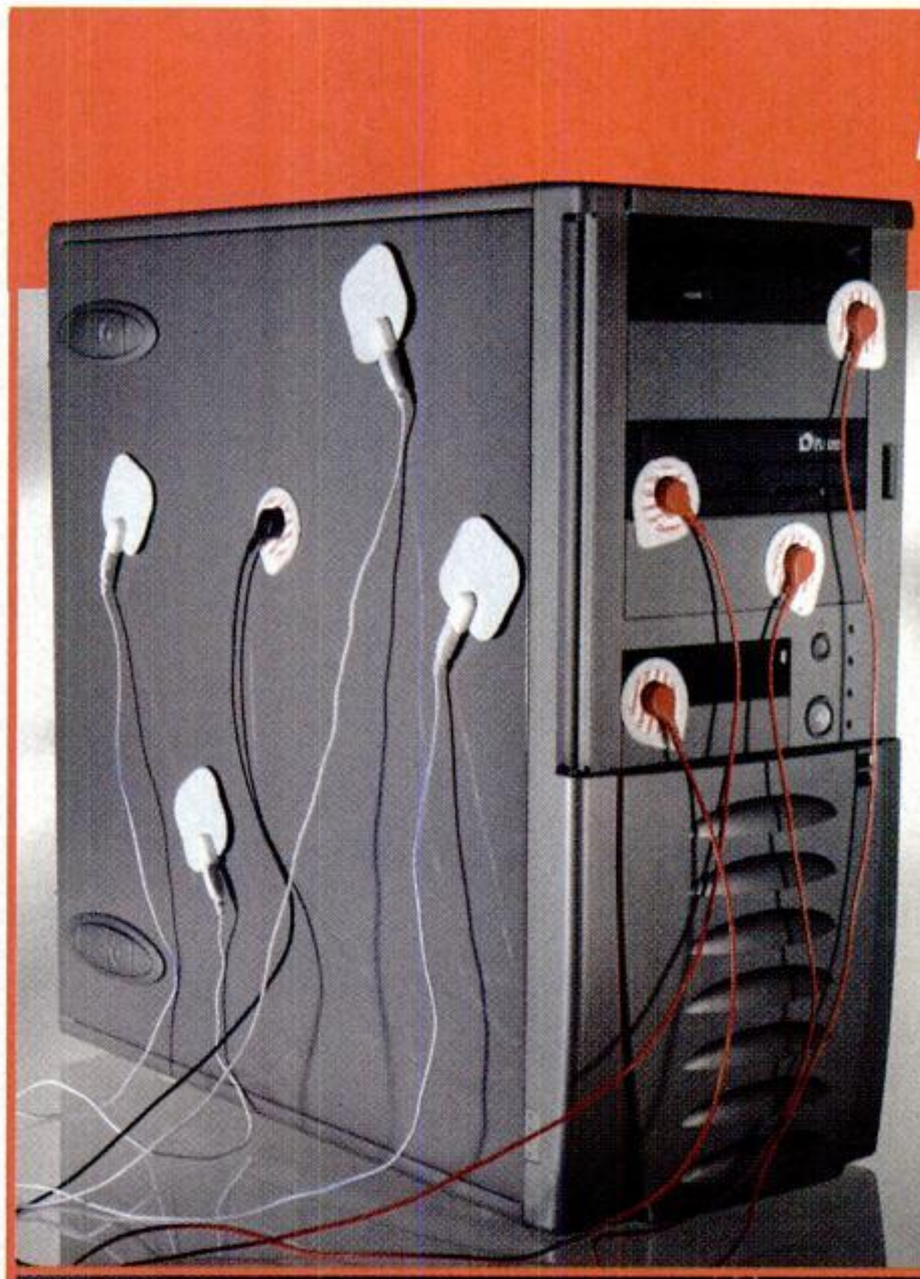

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In/Out

You write, we respond

THAT'S NO UPGRADE!

In the July issue ("PC Makeovers"), you had three computers ready for makeovers. I understood most of the updates/upgrades to the first PC, as this is a realistic scenario for most of us average geeks. On the second PC upgrade, however, I think you guys went slightly overboard. I mean, the whole idea of upgrading is to keep as many of the older yet still usable parts! The one I disagree with most is the high-end box—you might as well have built a whole new computer, which you basically did. To make over this PC, it would have been more than sufficient to replace the CPU, the videocard, and the case.

—MIKE KAISER

EDITOR IN CHIEF GEORGE JONES RESPONDS: We certainly understand that not everyone can afford the extravagant totality of the makeovers we presented in our July issue. However, the primary point of the story was to indicate a wide variety of component- and case-upgrading options that both budget-conscious and damn-the-cost upgraders can and should take into consideration if they want to improve the performance of their PCs. Of course, we'd have no problems if you went all-out and enacted all the upgrades we suggested. After all, that's what *Maximum PC* is all about: configuring the computer of your (and our) dreams.

THE WEAKEST LINK-SYS

It has been going around the net that there is a major security problem with the Linksys WRT54G router, which received a Kick Ass award in the June 2004 issue. I read online that the problem "may grant malicious people administrative access to a vulnerable device. The problem is that the administrative web interface is accessible on the WAN interface, even though the remote administration functionality has been disabled." So what's the deal?

—PERRY SIKES

TECHNICAL EDITOR WILL SMITH RESPONDS: The particular vulnerability you listed is certainly a problem, but it's only a major problem if two things happen. For someone to gain control of your router, they would have to know your admin password—either because you never changed the default or because you use a silly password that is easily haxored. Second, the firewall has to be disabled, and it's on by default.

So, while this is definitely a problem with the Linksys WRT54G series of routers, it's one that shouldn't affect most people, especially *Maximum PC* readers who use real passwords that contain numbers and letters. Regardless, Linksys should have an updated firmware available for download by the time you read this.

HEADPHONES BELONG IN BEST OF THE BEST

I just had a quick suggestion for your "Best of the Best" product list: Would you please add a headset category? I liked the reviews of the headsets in your June issue, but it left me wondering if the Plantronics DSP-500, which scored a 9, is the best headset that you've seen. Because it didn't get a Kick Ass award, I figure there must be a better product out there somewhere. I'm all about headsets since I have a family and I don't like keeping them up into the wee hours of the night with a blaring 7.1 system.

—CHAD

MAXIMUM PC INTERN TAE K. KIM RESPONDS: Chad, have you considered getting your family members some earplugs and telling them to just deal with it? If they really loved you they would, you know.

As for the "best" headset we've seen, the Plantronics DSP-500 is great but it's not as good as the Sennheiser PC155 USB we review in this issue. We lauded this product for its comfortable earphones, sonic power, and its standard audio connectors. We should note that Sennheiser sells a USB adapterless version of the PC155 for about half the price, which is a steal, in our opinion.

As for adding headsets to the "Best of the Best" list: It's something we've considered, but have held off on because a quality headset isn't high on most people's "Must-own hardware" list. This is rapidly changing thanks to the growing popularity of online gaming and the increasing viability of VOIP.

And hey, maybe you're not the only one Chad. If any readers are interested in seeing a headset category added to the "Best of the Best," let us know at input@maximumpc.com.

BTX BOO-BOO?

I was just reading the BTX article in the July issue ("Behold BTX!"), and was a little perplexed with the top photo in the story. Is the BTX case upside down? I was trying to envision it in my home, and then realized the Intel marking on the motherboard is upside down. If that's true, will the power supply cables come from the front? If not, does this mean the PCI cards will be facing towards the front? I don't know if I'm ready for wires coming out of the front of my PC's case!

—DAVID PAUL

SENIOR EDITOR GORDON MAH UNG RESPONDS: We had to do a double-take as well when we read your letter, David, but the orientation is correct in the photo. Apparently, Intel silk-screened the name upside down on the board. Based on the designs we've seen, we can assure you that the power cables will not come from the front of your PC; they'll still be routed from the rear of the machine like they are with standard ATX motherboards and cases. The add-in cards—both PCI-Express and PCI—will continue to be rear-mounted as well. And don't forget, BTX cases open on the right side instead of the left.

PADS OR PASTE?

Number 15 of your "15 Common PC Upgrading Mistakes" (July 2004) states, "If your new proc includes a heat pad, use the pad rather than removing it in favor of paste." Doing this is a huge mistake. The performance difference between a generic thermal pad and some high quality thermal paste such as Arctic Silver can be as much as 5°C. That's a huge difference for a little paste. Please let your readers know that this is the case.

—JON BECK

SENIOR EDITOR GORDON MAH UNG RESPONDS: While we're certainly proponents of high-quality thermal paste such as Arctic Silver, we still believe you're best served by using the thermal pad that comes with a heatsink. Of course, we are putting a certain amount of faith in the heatsink manufacturer, which we trust is not using a generic pad and thereby hurting the image of its product. But by all means, if you've already consumed the thermal pad that comes with the heatsink, we'd recommend using a quality heatsink

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paste and not trying to reuse the pad.

GEEK QUIZ UNFAIR?

I feel the Geek Quiz [June 2004] is demeaning, and in no way helpful for us geeks as you suggest. No matter what level the person taking the quiz achieves, there was some kind of derogatory comment. Especially in the first category ["Geekus Ignoramus"], which I guess is the level most of your readers and staff made it to.

I count myself as a geek, although I failed miserably at your quiz. I took the whole thing ignoring the fact that I failed each section and got about 80 percent right overall. Perhaps next year you should divide the quiz into categories: networking, PC building, software knowledge, etc. Any geek would be hard-pressed to know things from the broad subject range in each section. In any case, I hope I don't see a fifth annual quiz unless it's presented along with the scores of your staff so I can laugh at you as you are no doubt laughing at me!

—STEVE

WHAT'S SATA GOT TO DO WITH IT?

In your review of the MSI K8N Neo Platinum Mobo in the July 2004 issue, you said "The presence of native SATA means you won't need a floppy and fast fingers to perform the dreaded 'F6' driver combo just to install Windows XP." What in the world does native SATA have to do with getting around the fact Microsoft wants a floppy disk instead of a CD/DVD to input any needed drivers during an install?

—RICHARD

ASSOCIATE EDITOR JOSH NOREM RESPONDS: The message we were referring to is the one displayed by Windows upon a fresh installation. It reads: "Press F6 to install a third-party SCSI or RAID driver." But this message also applies to Serial ATA controllers. Typically, if you want to install Windows XP onto a Serial ATA hard drive you have to press F6 to load the drivers for the controller, even if it's an onboard chip (depending on the board). With the MSI board though, the SATA controller is native to the south bridge, so this step isn't required. It sees a SATA drive without any special drivers required just like any motherboard would see a Parallel ATA drive without special drivers installed.

WHITHER THE HD WONDER

An issue or two ago, you mentioned a new product called the ATI HD-All-in-Wonder, but it was MIA in the July issue. I have been researching the parts for a Media Center PC, but no one seems to have a do-everything tuner card for Digital/HDTV subscribers. Hauppauge comes close with its WinTV-HD product, but the software doesn't match the robustness of ATI's suite. And ATI's HD Tuner requires a second videocard, which would be tough to fit in most of the SFF cases I was considering using. Plus there's no FM tuner like the All-In-Wonder 9600. Is the All-In-Wonder HDTV card the Holy Grail?

—FRANK SCHIAVONE JR.

STUCK IN THE LAND OF RADEON 9800

I want to upgrade my videocard relatively soon before the new shader games like *Doom 3* and *Half Life 2* are released. However, I do not want to buy nVidia's or ATI's best card. Does either company plan to release budget cards based on their newest chipsets, or am I stuck buying a Radeon 9800 Pro?

–NICK SIMONETTI

TECHNICAL EDITOR WILL SMITH RESPONDS: Both companies are releasing loads of new cards designed to fit any budget. In fact, we are currently waiting to receive a batch of budget, midrange, and high-end 3D cards. You can look forward to at least two pages worth of videocards in the next issue Nick!

TECHNICAL EDITOR WILL SMITH RESPONDS: The problem with current HDTV solutions is that they just don't work with digital cable or satellite HDTV transmissions. We received an All-in-Wonder HDTV just as we closed this issue, so we'll definitely review it next month and give you the full scoop on HDTV for your PC.

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CUT, COPY, PASTE

➤ In our June 2004 LCD roundup, we mistakenly called Planar's monitor the PL170; the model number is actually PL1700.

➤ In the July 2004 PC Makeover story, we incorrectly stated the price for Hitachi's extravagant 400GB Deskstar drive as $160. That was some kind of wishful thinking—the real price is about $410. We apologize for the error.

➤ We also confess to the following sin: In our first look at Windows Longhorn's 3D interface (July, page 15), we printed a screenshot with a naughty word in it. We apologize to anyone who was offended.

COMING NEXT MONTH

IN THE *COMMITTED-TO-FRESHNESS* SEPTEMBER ISSUE OF MAXIMUM PC

THE DREAM MACHINE

Our annual foray into PC greatness is finally here! Next month you will be dazed, dazzled, and mesmerized at the fastest PC you've ever seen. Here's a tantalizing hint: Can you say DDR2?

THE GREAT CASE ROUNDUP

Looking for a new chassis to house the brand-new PC you're building? We're rounding up more than 15 different cases and building a PC in each of them in order to discover which is best. Tune in next month to find out!

MP3 PLAYERS

Testing MP3 players sounds fun, doesn't it? Well, it is. But along with this fun comes a great deal of responsibility. Thankfully Features Editor Logan Decker is up to the task. His mission: to determine which of the newest crop of portable audio players is best. And whether any of them holds a candle to the iPod.

PLUS

Our second programming How-To, Intel's new CPU naming scheme, and hardcore reviews of digicams, hard drives, wireless devices, and more!

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QuickStart

The beginning of the magazine, where articles are small

Are PDAs Dead?

Smartphones are stealing the spotlight from handhelds—but will they kill them off altogether?

PDA enthusiasts everywhere shuddered when Sony recently announced it was discontinuing its line of Palm-based Clie handhelds in all markets except for Japan. Is this the beginning of the end for handhelds? *Maximum PC* examines the evidence.

Requiem for a PDA.

YES

Smart phones are on the rise, particularly Handspring's Treo 600. The stats may be modest (144MHz ARM proc, 32MB RAM, 160x160 resolution, 0.3 megapixel camera) but the execution is right on. Thumb typing on the built-in keyboard is a breeze, yet the entire unit weighs just 6 ounces and is about the size of a deck of cards. Running Palm OS 5.2, you've got an all-in-one phone/PDA that can surf the net without the kludgy connectors required by handheld/phone interfaces.

Even the nominal handwriting recognition on PDAs is better than fumbling with T9 English text messaging. But foldout keyboards, like Think Outside's Stowaway Bluetooth Keyboard ($150, **www.thinkoutside.com**), could swing the balance back in favor of phones. Text messaging, e-mail, and tedious blog entries via cell phone are now a piece of cake.

It's only a matter of time before miniature hard drives with low power requirements make their way into smartphones. When they do, handhelds will look even less attractive compared with the knockout combination of phone, PDA, and massive storage capacity—all in a Treo-size package.

NO

Let's face it—PDAs will always boast brawnier processors than their smarty-phone rivals. And brawnier processors mean you can run more complex apps, search faster, and play cooler games. When a laptop is overkill, PDAs step up to the plate.

Smartphone screens are necessarily small, and that doesn't cut if for most work. Most handhelds offer easy-on-the-eyes 320x240 visuals, and Toshiba's e805 ($600, **www.toshiba.com**) is the first PDA to shine at 640x480 resolution—high enough to do actual work rather than jotting a few notes on the go.

The PDA can use its fast processor and large capacity storage options to take on some of the entertainment capabilities of laptops and become portable media centers. Windows Media Encoder (free, **www.microsoft.com**) allows you to compress video to fit on a Pocket PC, SnapStream's *Beyond TV 3* ($60, **www.snapstream.com**) will format recorded television for your PDA, and apps like DVD to Pocket PC ($25, **www.makayama.com**) automate the process of compressing your DVDs to fit on external media of any size. Games, MP3s, and movies wherever you want them—suddenly the Treo looks a like a wuss, doesn't it?

OUR VERDICT

Ultimately, the threat to PDAs comes from both sides. Smartphones will continue to appeal to folks who want mobility and convenience, and will inevitably co-opt more and more PDA-style functionality. Meanwhile, power users will gravitate towards ultra-mini PCs running full versions of Windows XP that are just around the corner from Sony, FlipStart, and OQO. With smartphones on one side and mini PCs soon to be on the other, we see the PDA market eventually getting squeezed to a sliver. Bummer!

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Ask the Expert: CRT Monitors

What does the demise of Sony's legendary F520 monitor say about the future of CRTs?

Bob Stevens, Sony IT Product Manager

Sony's F520 21-inch flat screen CRT was a vision to behold, boasting the visual clarity that comes from an unparalleled 0.22mm aperture-grille pitch. The F520 reigned supreme as a *Maximum PC* favorite in its category for an unprecedented three years. Unfortunately, early this summer, Sony announced it was discontinuing our most beloved monitor, which made us wonder about the company's future plans in this category. After all, Sony's patented Trinitron technology is quite literally synonymous with CRTs. So what gives? Here's what Sony IT product manager Robert Stevens had to say.

Sony is keeping only one CRT model in its IT-display product line, the GDM-C520. Will Sony continue to make other CRTs for branding by other companies? And if so, will Sony continue to develop new Trinitron technology for its partners?

The growing trend in the display environment is to replace CRTs with LCD displays. With advancements in technology and the bottom-line savings for consumers, we have shifted our focus to the production of LCD displays.

We will continue to support and offer the Artisan CRS, model GDM-C520 [reviewed in *Maximum PC*, July 2004]. Sony will remain involved in this segment because the Artisan Color Reference System is critical for color-focused graphics users. We are no longer manufacturing OEM products.

The GDM-F520 boasted the finest aperture-grille pitch (0.22mm) of any consumer CRT, yet Sony opted for a 0.24mm grille pitch for its GDM-C520. What motivated that decision?

Sony invested considerably in the color market and as a result developed a product that meets the needs of this market at an appropriate and affordable price point. While the GDM-F520 has fabulous "front of screen performance," making this model into an Artisan type product would have put the street price beyond the market threshold for our target market.

In respect to raw hardware capabilities, did consumer CRT technology reach its pinnacle with the F520?

Sony spent the past 30 years developing and fine-tuning CRT technology, especially for the critical IT user. Sony's CRT technology continued to advance even beyond that of the GDM-F520 [and continues in earnest in the area of CRT televisions]. The GFM-F520 was the best technology Sony could offer at the appropriate price/performance ratio for our IT display customers. We are now focused on LCDs for computer display technology.

The end of an era: Discontinuing the top-notch F520 leaves just a single CRT—a high-end reference model—in Sony's catalog. Will other manufacturers rush in to fill the gap, or will CRTs go the way of the dodo?

ALT.OPINION.RANTS BY JON PHILLIPS

In with the Dream, out with the Dream

Next month, *Maximum PC* will begin its *ninth* year of publishing. I've been with the magazine from jump street—holding stints as a monthly columnist, executive editor, and editor-in-chief—and the hardware I've seen has delighted, surprised, and even disgusted me. But it hasn't left me jaded. For this, I can thank the forward march of technological progress, which has kept the PC scene fascinating throughout the years.

Consider that the Dream Machine we showcased in our very first issue (September 1996) was spec'd to include a 200MHz Pentium CPU and 32MB of memory. Today, a Dream Machine-caliber rig might include a 3.4GHz CPU (about *17* times faster from a pure clock-frequency perspective), and 2GB of memory (that's *64* times the size of an old-fangled 32MB module).

But these number comparisons are just simple abstractions. The important thing to remember is that Dream Machine 1996 wouldn't even be able to run most of the software we take for granted today. That rig didn't even have MMX support. Never heard of MMX? My point exactly.

And how's this for quaint: Our inaugural issue included the cover line, "First Look! 200MHz Monster Systems with Onboard 3D." What innocent times we once lived in. Legitimate 3D acceleration wasn't yet on our radar, and it would be a few more issues before we championed 3dfx's Voodoo card as the must-have 3D accelerator. Actually, to say we "championed" 3dfx vastly understates what really happened: Our editors fought over Voodoo boards like cockney schoolchildren squabbling over golden Wonka tickets. We even took turns bringing cards home for the weekend. That's how rare and coveted the Voodoo boards became.

As for 3dfx, the company became a fallen giant in due time, a development that seemed impossible in 1997 and 1998. Ironically, Matrox—whose 4MB Millenium board appeared in Dream Machine 1996—still lives today, though only because its 2D video still kicks ass.

And so, on this eve of the launch of another Dream Machine project, it's time to reflect, and also say goodbye. This column marks my last regular, monthly writing contribution to *Maximum PC*, breaking a chain that has spanned all 95 issues we've published to date. FWIW, having access to the coolest, neatest, most cutting-edge PC hardware hasn't been the best part of being a monthly contributor. No, when I look back on my nine-year stint, I expect my fondest memories will be of co-workers and die-hard readers. PC enthusiasm is, after all, a *human* passion, all the silicon and PCB notwithstanding.

Jon Phillips was formerly editor-in-chief of Maximum PC, *and now serves as the magazine's editorial director.*

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FAST FORWARD BY TOM R. HALFHILL

The CPU's Evolutionary Detour

Nearly everyone is ecstatic over Intel's decision to cancel some future single-core processors and replace them with dual-core chips. Who doesn't like a two-for-one deal? However, I consider it a detour in microprocessor evolution.

Since the 1970s, microprocessors have benefited from numerous architectural innovations: pipelining, branch prediction, speculation, hardware-assisted simultaneous multithreading, and more. Almost every new microprocessor generation has introduced a new way to run programs more efficiently—that is, to increase the number of instructions executed per clock cycle. Integrating two or more processor cores on a single chip does that, too.

But does that mean progress will consist largely of slapping down more cores on a chip? Let's hope not. Symbolically, it would signal the end of microprocessor evolution as we've known it. Pragmatically, it would soon yield little performance improvement beyond the usual increase in clock frequency.

Here's why. Multicore processors try to boost performance by executing multiple tasks in parallel. There are two types of parallelism: instruction-level parallelism and data-level parallelism. Most PC software has very little instruction-level parallelism to exploit. Too many instructions in a program need the results of previous instructions before they can execute, so they must wait until those previous instructions finish computing their results. Imagine a factory worker on an assembly line trying to mount the car's wheel before the axle has been installed, and you'll grasp the problem. Even if your CPU chip had 100 processor cores, it wouldn't run most of your productivity apps much faster than they run now.

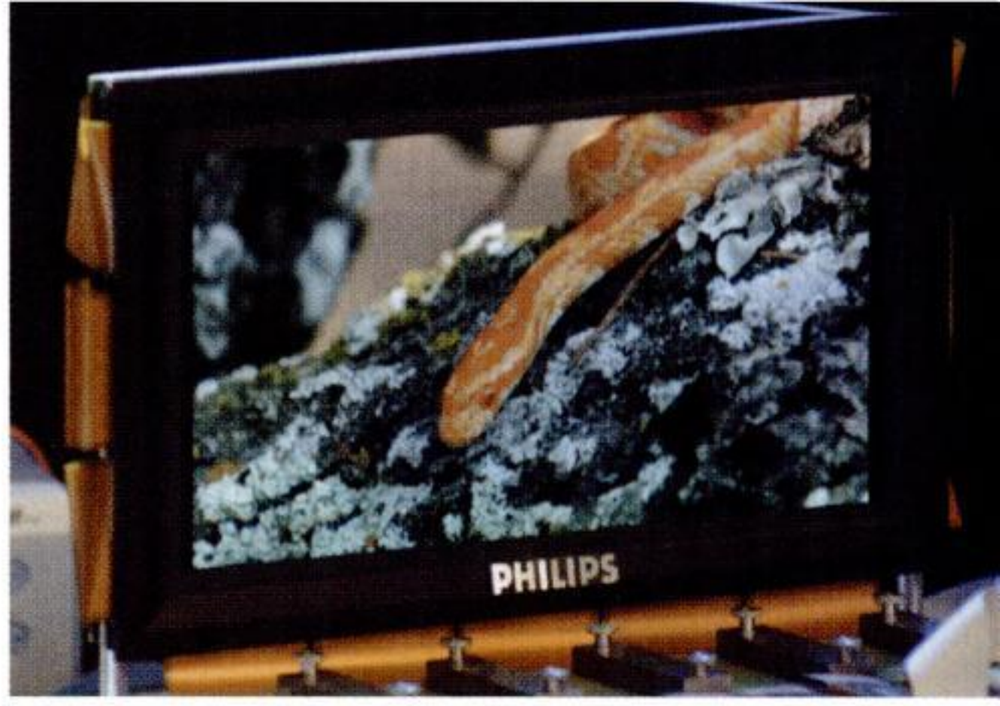
Data-level parallelism is easier to exploit, at least with programs that have lots of graphics, audio, video, or other large data sets. A great example of data-level parallelism is the SETI@Home (Search for Extraterrestrial Intelligence) project. It uses the Internet to distribute chunks of digitized radio noise received from outer space to about 500,000 computers around the world. Each PC independently analyzes its chunk of data, looking for patterns that might indicate an intelligent radio signal. A virtually unlimited number of processors can work in parallel on this task, because one chunk of data doesn't necessarily depend on a result from another chunk of data.

That's why graphics-rich games, image editors, sound editors, and other data-intensive apps stand to benefit from multicore processors. Most other kinds of programs will hardly benefit at all. So the future progress of computing still depends on the evolution of the processor itself, not simply on replicating many processors on a single chip.

Tom Halfhill was formerly a senior editor for Byte *magazine and now an analyst for* Microprocessor Report.

Presenting PolyLED

Philips unveils the display of the future, and it looks bright



Presenting the first image of Philips' prototype 13-inch high-contrast television. We're assuming that's the Discovery Channel onscreen.

In a few years, your laptop display will be visible from all angles, not just head-on. Your PDA will be legible even in direct sunlight, thus minimizing the crow's feet around your eyes from chronic squinting. Your phone will last hours longer because the display doesn't require any backlighting. And even your lightweight, low-profile desktop display will be able to show brilliant detail in movies and keep up with fast-paced action games without blurring or smearing. Sounds *Minority Report* futuristic, right? Well, Philips' prototype 13-inch TV, shown below, is a living, breathing demonstration of PolyLED's change-everything potential.

PolyLED is Philips' take on OLED (organic light-emitting diode) technology. This technology dispenses with the relatively bulky semiconductors used in today's LCDs, which are also difficult and expensive to manufacture. Instead, PolyLED uses a proprietary recipe of polymer materials that are sprayed onto a single layer of glass substrate using inkjet technology. The result is a bright, self-emitting display that, in addition to using much less power, is cheaper to manufacture, and capable of producing full-color displays less than a millimeter thick.

Philips anticipates that PolyLED televisions and monitors will debut in five years, but we suspect market pressure from laptop, PDA, and phone manufacturers—all of which are straining to eke out as much battery life as possible—could accelerate development.

FUN-SIZE NEWS

Green tea: Good for you, good for your hard drive.

GREEN TEA—BEVERAGE AND HARD DRIVE POLISH!

If you've ever looked inside a hard drive, you know the platters have a mirror-like finish. That's because they've been ground down and polished to the point where surface variations are less than a single nanometer. Traditional polishing fluids are a toxic slurry that must eventually be discarded somewhere (not in our backyard). But Ventana Research has created a kinder, gentler polish using synthetic proteins and an extract from good ole' green tea, the favorite beverage of wise men everywhere. Because the "Ventana fluid" binds naturally to particle debris, it's also being considered for use in wastewater treatment.

WINDOWS MOBILE 2003 SE DEBUTS

Dell's Axim X30 is the first handheld to ship with Windows Mobile 2003 Second Edition, an update that includes support for 640x480 (VGA) displays in landscape or portrait mode. Other tweaks include support for dual-function cards (such as SanDisk's Connect Plus, which combines 128MB of storage with a Wi-Fi adapter), an update for *Pocket Internet Explorer,* and support for WPA (Wi-Fi protected access) encryption. For more dirt on Windows Mobile, check out our review of the Axim X30 next month.

HD-DVD STANDARD DEFINED

The DVD Forum steering committee has approved the first physical specification for HD-DVD (high-density DVD) read-only discs, and the spec requires that manufacturers of HD-DVD playback devices include three video codecs: MPEG-2, MPEG-4, and the VC-9 technology used by *Windows Media Player 9 Series.* Although the specification gives Microsoft's codec a boost in credibility, it faces competition from two competing standards—Blu-Ray, and a Chinese format called EVD. All three are vying to establish themselves as the standard for large-capacity DVD as high-definition television rolls out. Whether we'll get one standard or a dreadful three-way tie remains to be seen.

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We See Dead Products

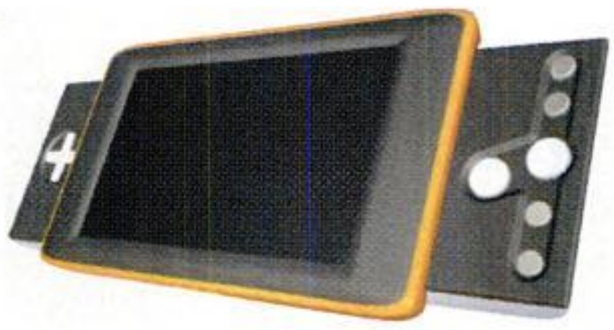
These three technologies seem destined for not-so-greatness

We sympathize with industrial designers. After all, our own attempts to build a combination cellphone/taser resulted in an unfortunate and quite painful testing mishap, proving that even the best ideas are sometimes unworkable. But occasionally, companies quixotically refuse to cancel products despite every conceivable warning sign. *Maximum PC* rubbernecks three concepts currently charging toward the edge of extinction.

The iVue

Biometric security company VeriTouch got together with Swedish design firm Thinking Materials to create the iVue, a "handheld audio/video player capable of biometrically encrypting and decrypting digital media content." Yes, that's right—an MP3 player that requires your *fingerprint* to use. The company claims the fingerprint sensor will be used to "unlock and play back files in real time" and will include technology to prevent the extraction of files from the internal hard drive.

How and why these features would be of any interest to consumers is anybody's guess. But we hear the RIAA is interested. That's reason enough right there to steer clear of this concept.

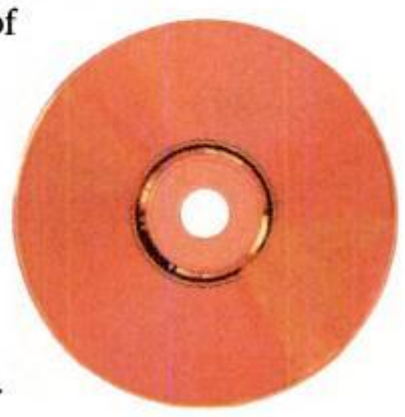


The iVue prototype drawing. Don't let strangers get their hands on your Avril Lavigne playlist!

DVD-D

Sensing consumer frustration with having to return DVDs on time or pay late fees, FlexPlay came up with an ingenious solution with its EZ-D discs. You buy the discs at the rental store, and open them whenever you want. Once opened, exposure to air causes the discs to slowly disintegrate, giving you about 48 hours of viewing time, after which you toss them into the trash. Unfortunately, Disney set a doomed-to-fail price of $7 per disc during the company's trial run with the new format. Sales were disappointing, to say the least, and you'd think that would be the end of it. But *nooo*....

FDD Technologies apparently came to a different conclusion about what caused the launch to fail—*the discs simply didn't disintegrate fast enough!* Enter DVD-D, the disc that becomes useless in just eight hours. FDD is currently looking for marketing partners. "Hello...? Anybody...?"



Want to get burned by your DVD?

Polaroid Image1200

Polaroid, the company behind what was once the Coolest Thing in the World, is introducing the Image1200, the instant camera with an *LCD viewfinder*. Now, instead of buying a digital camera and uploading images to your PC and then e-mailing them to your friends, you can: Buy the Polaroid Image1200 for $170, buy a 10-pack of film for $14.95, take the picture (hoping to get it right in one shot), wait for the image to appear, scan the image, and resize it for e-mail. And what's the LCD viewfinder all about?

The best argument Polaroid could muster in favor of its old-skool format is that its cameras are "standard equipment for many law enforcement officers."

Is Polaroid going to trot out James Garner for this?

GAME THEORY BY THOMAS L. McDONALD

PCs and Consoles: Unlikely Bedfellows?

When I first began covering games back around 1989, there was this strange and immature antipathy between computer gamers and video gamers. A generation wet-nursed on the first video games left their consoles behind for computers. Throughout the 1990s, computer and video game design took very different paths, only to converge again at the turn of the millennium with the dawn of Xbox and PS2.

A good example of this cross-pollination can be found in *Thief: Deadly Shadows* (which is on shelves now) and *Splinter Cell 3* (due this fall). Some would argue that the stealth-action genre was born in 1998 with *Metal Gear Solid* or *Tenchu*, both PSX titles. They, of course, would be wrong. 1998 was the same year Looking Glass finally published its monumental, long-awaited epic *Thief: The Dark Project*, the first "first-person sneaker." From the ground up, it was designed to challenge players to use their wits, stick to the shadows, and avoid conflict in order to achieve a goal.

PC gamers were still getting use to this radically new game style when they were blindsided by another 1998 title: the original *Rainbow Six*, pater familias of the entire tactical shooter genre. *Rainbow Six* begat *Raven Shield*, and *Raven Shield* begat *Ghost Recon*, and *Thief* and *Ghost Recon* laid together and begat *Splinter Cell*, which proved that the Xbox could indeed have a life beyond *Halo*. And *Splinter Cell* was ported to PC, and PC gamers saw that console-style third-person stealth-action was good and they could now forget all about the club-footed *Metal Gear Solid* PC port.

Now we come full circle. Despite having *Splinter Cell: Pandora Tomorrow* and various *Splinter Cell* ports on its plate for the past year, Ubisoft shocked everyone at E3 by showing a fairly advanced build of *Splinter Cell 3*. The game looked truly gorgeous, with the kind of detail that stealth games demand. In fact, it looked better than any Xbox game to date, and there was a good reason: It's being developed for PC. The power of the new generation of graphics cards was simply too tempting for the developers, who needed the hard horsepower of the PC to create the most detailed *Splinter Cell* game to date.

Meanwhile, *Thief: Deadly Shadows* has ambled on over to Xbox, giving console gamers their first taste of this landmark series. *Splinter Cell 3* will eventually, maybe next year or so, find its way to console systems, with the PC graphics duly downconverted, of course. But since we are all one big happy electronic gaming family now, sharing game design styles and techniques, PC gamers wouldn't even dream of gloating.

Tom McDonald has been covering games for countless magazines and newspapers for 11 years. He lives in the New Jersey Pine Barrens.

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TechnoFile

Quick takes on technology trends

Infinium Labs Phantom Console and Controller

We're quite skeptical about any kind of "PC-based console" but we have to pay props to the whiz kids down at Infinium Labs. The Lapboard is the company's unique new controller for the Phantom Gaming Service—the PC equivalent of an Xbox or PS2—and it *kicks ass*. We got a chance to play *Unreal Tournament 2004* using this keyboard/mouse hybrid, and the experience was sublime.

Dig this: The keyboard is mounted at one end to a hinge, which can hold the entire keyboard up above the surface that rests on your lap. When the keyboard is tilted up, the keys are at a perfect angle for comfortable deathmatching, while the lower surface is available for mousing with your right hand. The entire keyboard pivots, so it's suitable for left- or right-handers, and the entire assembly folds down for easy storage. If only we could buy one for our own living room PCs.

For the latest launch information and pricing, go to **www.infiniumlabs.com**

Infinium Labs' Lapboard in repose.

The Phantom Console main unit.

The Lapboard in action. It might look a little wonky, but it plays like a dream.

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Head2Head

A showdown among natural PC competitors

THIS MONTH: Ergonomic Chairs!

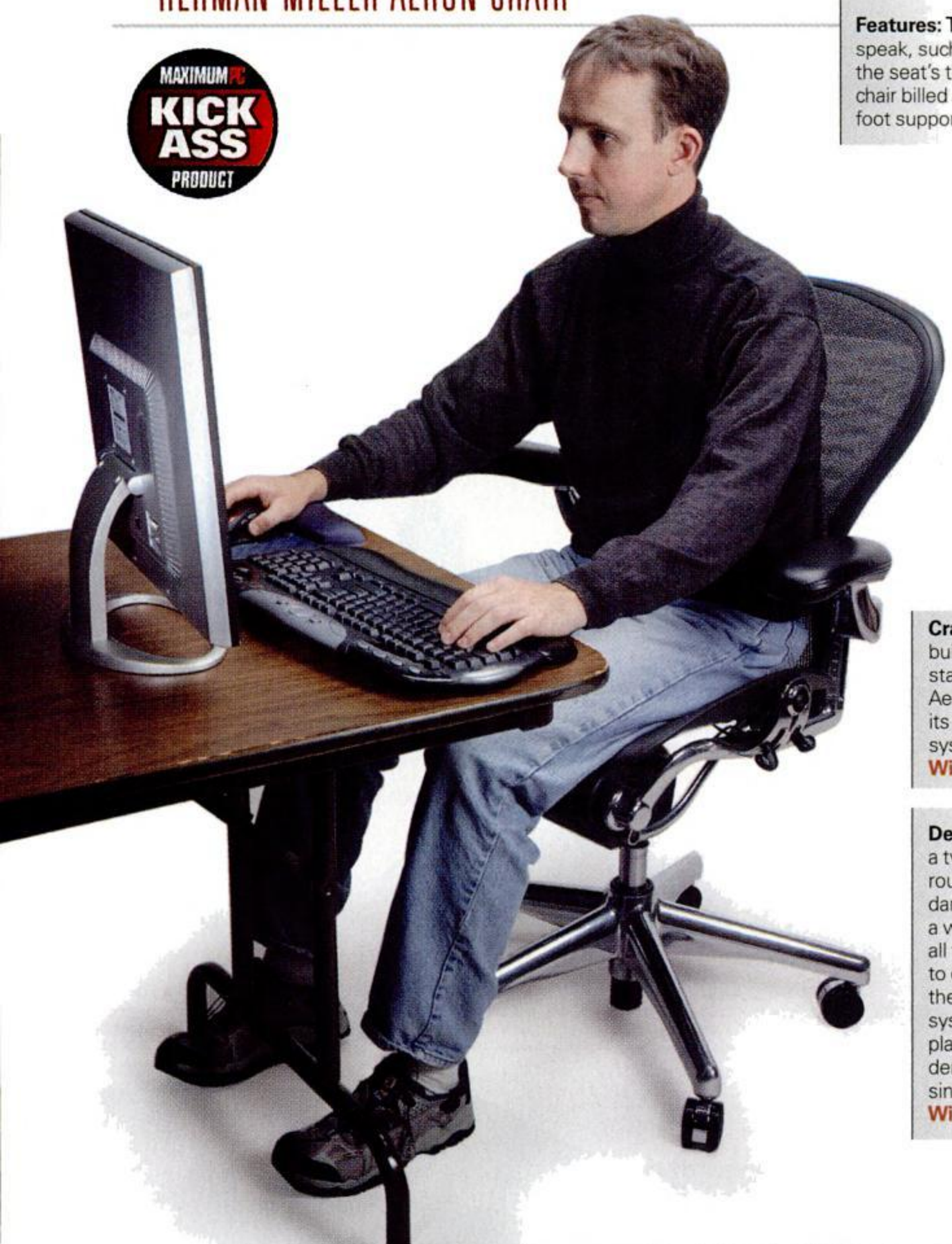
If you're like us, the chair you use at work is the standard "two arms and a seat" variety. These no-frills office trappings aren't exactly painful to sit in, but they also won't earn you any accolades from your arse. That's a shame, particularly if your rump puts in even more time playing computer games after hours. Thus, we wondered if an "ergonomic" solution might not make for a more gratifying experience.

To answer this question we compare two different approaches to ergonomic desk chairs. In one corner we have Herman Miller's Aeron chair, which until a few years ago was *the* symbol of the decadent dot-com office environment.

In the other corner we have Health Postures' Plasma 2 system, a new kid on the block that uniquely allows the seat and arms to be adjusted along a vertical arc, so you can stand *or* sit within easy reach of your keyboard and mouse. Both chairs offer more comfort and features than your regular chair, but only one can be king. Let the throne throwdown commence!

—JOSH NOREM

HERMAN MILLER AERON CHAIR



Features: The Aeron specs include a whole host of comfort technologies, so to speak, such as PostureFit for lower-back support and Kinemat Tilt for, well, adjusting the seat's tilt, but in plain language these are the features you'd expect from any chair billed as "ergonomic." Something the Aeron lacks is any kind of lower leg or foot support, which the Plasma 2 chair offers. **Winner: Plasma 2**

Adjustability: Despite the Aeron's conventional formfactor, the chair is highly adjustable. Its seat moves up and down, the backrest tilts forward and back and can be locked in at any angle within its range. You can also adjust the amount of resistance you feel when you lean back. The armrests slide up and down and pivot both inward and out, and even lumbar support is adjustable. The Plasma 2 offers fewer specific adjustments in favor of a more radical whole-body approach. **Winner: Aeron**

Comfort: On first contact, we weren't blown away by the Aeron; in fact, we were a little disappointed by the absence of any cushioning. But we definitely came to appreciate its taut mesh suspension seat over time. The firmness of it eventually gives way to a feeling of flexible support. The Plasma 2 is much more soft and plush, but its squishy nature feels less supportive than the Aeron, and therefore less comfortable. **Winner: Aeron**

Craftsmanship: Both chairs are sturdy and well made, but the Aeron's build is clearly superior. Whereas the Plasma 2 is constructed from standard materials such as cloth upholstery, foam, and thick metal, the Aeron's makeup is more elegant, specialized, and refined. Everything from its curvy recycled-aluminum frame to its porous-membrane suspension system make the Aeron as pleasing to look at as it is to use.
Winner: Aeron

Desktop integration: The Aeron integrates easily with a typical workspace as its size and dimensions are roughly those of a standard desk chair. This was a welcome change after all the rearranging we had to do to accommodate the Plasma 2 "seating system's" motorized display podium, which incidentally limits users to a single-display setup.
Winner: Aeron

MAXIMUM PC VERDICT 9

FIBER

Very adjustable, excellent support, all-day comfort.

FIBBER

Could use a support for the knees and/or feet, no option for a standing mode.

$800, www.hermanmiller.com

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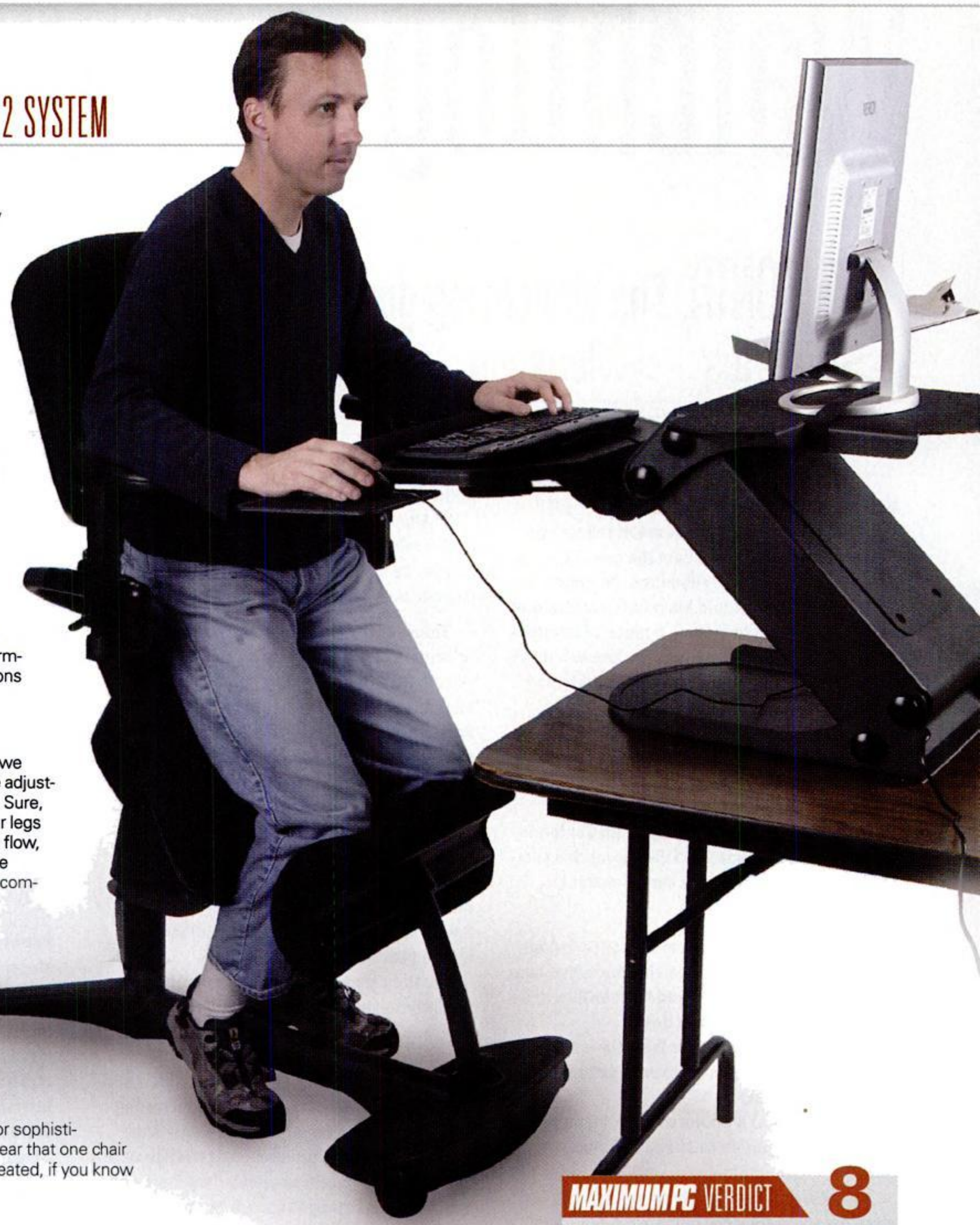
HEALTH POSTURES PLASMA 2 SYSTEM



Features: The Plasma 2 system is essentially one big feature—that being its incredible range of motion. With the pull of a lever, your body can be transformed from a seated to standing position (or anything in between), while head-to-toe support aligns the rest of your body accordingly. What's more, the chair works in conjunction with a motorized monitor/keyboard stand so your desktop can be easily adjusted to suit the changing stations of your chair. The Plasma 2 also features add-on risers for both sides of the keyboard tray that can hold a phone, speakers, documents, and other items that need to be close by. **Winner: Plasma 2**

Adjustability: Although the Plasma 2 is unique in its ability to move along a vertical axis, the seat itself has limited adjustability. The area that holds your rear can be raised or lowered and it's possible to manipulate the armrests, but overall, you're not given many options for personal fine-tuning. **Winner: Aeron**

Comfort: After long-term use of both chairs, we prefer the Aeron's firm support and extensive adjustability to the Plasma 2's cushy vertical action. Sure, it's nice to work in a prone position when your legs feel cramped or your bum needs some blood flow, but we spent the majority of our time with the Plasma 2 in the "normal" position, where its comfort was easily exceeded by the Aeron.

Craftsmanship: The Plasma 2 chair is well-constructed and feels solid, but the desktop accoutrements seemed flimsy. And considering the cost of the Plasma 2 system, we're disappointed that it's not more stylish or sophisticated. When compared with the Aeron, it's clear that one chair was "designed" and the other was simply created, if you know what we mean. **Winner: Aeron**

Desktop integration: Once you're firmly ensconced in the Plasma 2 system, it's best to stay put, because the leg support in particular can make exiting it difficult. Don't get us wrong: It's a comfortable way to sit, but because you are sort of wedged into the seat, you'll need to have everything on your desk within arm's reach. To this end, the Plasma 2 is sold with a variety of arms and platforms for holding various desktop items, but they require an additional layer of planning and rearrangement. **Winner: Aeron**

MAXIMUM PC VERDICT **8**

+ ERGONOMIC

Comfortable, and the ability to stand is a nice touch.

– ERGOMANIAC

Crude shape, limited adjustability, and pricey.

$1,995, www.healthpostures.com

THE UPSHOT

As cool as it is to move your chair from a sitting to a standing position with ease, in matters of overall comfort, features, and perceived ergonomic benefit, the nod goes to **Herman Millers' Aeron chair.** As much as we love the Aeron's sexy lines, expensive materials, and instant office cache, our butts made the final decision. The Aeron is simply more comfortable than the Plasma 2 system, and doesn't require the accompaniment of a cumbersome display elevator. ■

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WatchDog

Say hello to Koa, WatchDog of the Month.

Maximum PC takes a bite out of bad gear

THIS MONTH: The WatchDog goes after...

>Rebates >Monsoon >EZ Electronics

Rebate? What Rebate?

The Dog has heard his fair share of rebate horror stories. Like the one about the guy who purchased a notebook, submitted the claim forms, and was later told his rebate was held up because he failed to include a piece of information. Then he was told he was too late to submit for the rebate. Other readers have complained about the months of badgering it often takes before companies will make good on a rebate. And what about consumers who purchase rebated items but have only one receipt with which to redeem the rebates?

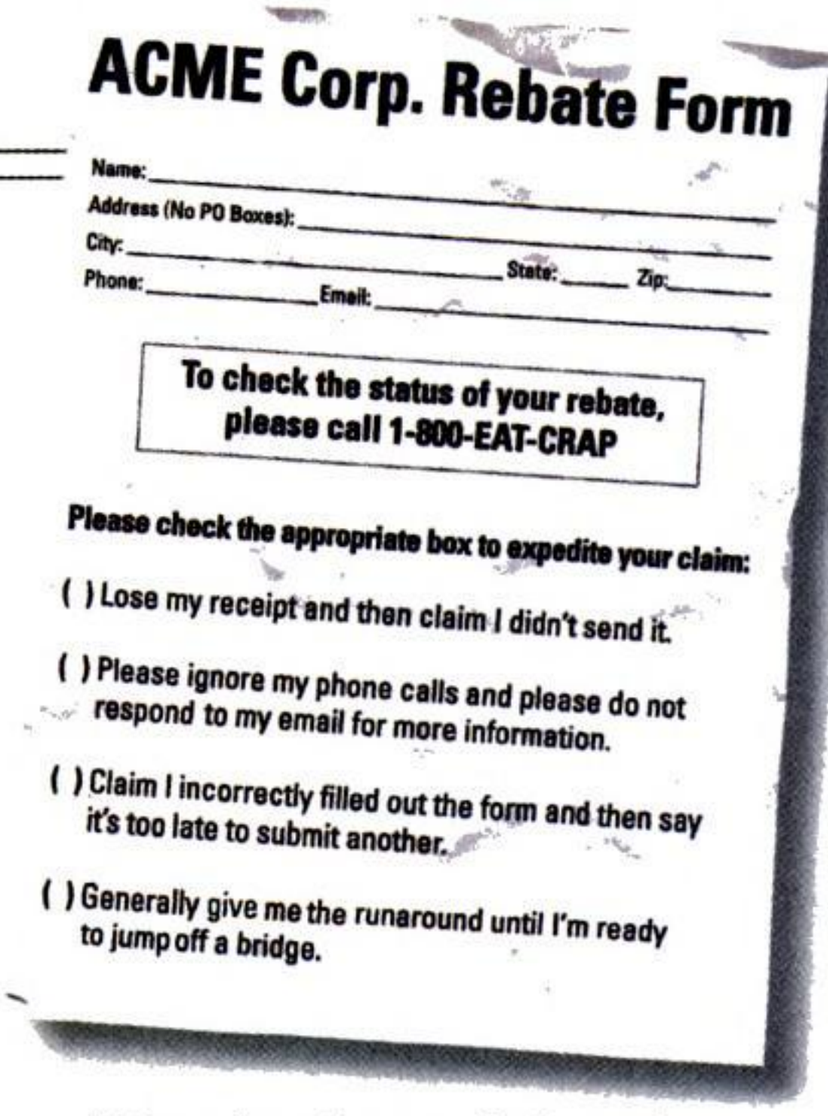
This bleak picture may change (in California, at least) if state Senate bill 1154 passes this summer. Proposed by California state Senator Liz Figueroa the bill would:

- Require rebate checks to be mailed to consumers within 30 days of receiving the rebate form.
- Require rebates offered by retailers to be redeemable at time of purchase.
- Allow at least 60 days from the date of the purchase for the consumer to submit the rebate claim form.
- Require that a phone number be made public for consumers to check the status of the rebate.
- Make it illegal for companies to ask for more personal information beyond the name, address, and home phone number.
- Allow copies of receipts to be submitted for rebates and allow that only the model number be written on the rebate form if the name of the product is not included.

These certainly sound like good reforms, but not everyone agrees. Wireless phone providers, grocery stores, and the Promotional Marketing Association have said any changes to the existing law are wrong for a number of reasons. First, by allowing people to submit copies of receipts, the law opens the companies up to increased rebate fraud by people who make a living running rebate scams. Companies also argue that consumers will ultimately suffer because Californians will simply be excluded from rebates because of the changes.

For their part, the phone companies argue that rebates associated with wireless, land line, and data service often require more than a name and address to establish credit.

What does the Dog think? These are valid concerns, but the companies need to recognize that consumers are increasingly frustrated by rebates that never materialize or are impossible to obtain because they have only one receipt. If companies are going to rely on rebates to entice consumers to buy products, they need to stand behind them 100 percent. Sadly, many don't. SB1154 is currently in committee for a rewrite.


ACME Corp. Rebate Form
Name:
Address (No PO Boxes):
City:
State:
Zip:
Phone:
Email:
To check the status of your rebate, please call 1-800-EAT-CRAP
Please check the appropriate box to expedite your claim:
( ) Lose my receipt and then claim I didn't send it.
( ) Please ignore my phone calls and please do not respond to my email for more information.
( ) Claim I incorrectly filled out the form and then say it's too late to submit another.
( ) Generally give me the runaround until I'm ready to jump off a bridge.

Rebates have become the bane of electronics buyers everywhere.

Monsoon Experiencing a Drought

DEAR DOG: Is Monsoon one more manufacturer to give up the ghost and leave its customers without a warranty? My Planar Media 9 subwoofer just bit the dust, and Monsoon is nowhere to be found.

— MIKE KEYES

THE DOG RESPONDS: Bad news, Mike. The Monsoon brand may be just as flat as its beloved satellite speakers. Despite its popularity in the speaker market, the brand hasn't been doing well. The original maker of the Monsoon speakers, Sonigistix Corporation of Canada, went under receivership in September 2001 after it ran out of capital, according to the company that helped liquidate Sonigistix's assets. A majority of its assets and intellectual property were purchased by Eastern Asian Technology of Singapore, but the Monsoon brand lived on under the auspice of Level 9 Sound Designs. At the time Level 9 President Jack Fatum said, "the acquisition marks the creation of a unique player in the audio industry. Level 9 is now the only major multimedia speaker company that integrates its manufacturing and proprietary technology development, giving us the strong competitive advantage of faster speed to market, extremely tight quality control over production, and guaranteed supply to our growing customer base."

Apparently, that advantage did not materialize. At press time, Monsoon's web site, www.monsoonaudio.com, provided no information about how to contact the company for service or support. Phone numbers for the company were either disconnected or not functioning. Messages left with Jack Fatum, former president of Level 9, were not returned.

Although Monsoon's web site promises a return, the Dog suggests that consumers steer clear of Monsoon products until the storm clouds dissipate. Woof.

The maker of Monsoon speakers may be drier than the Atcami desert.

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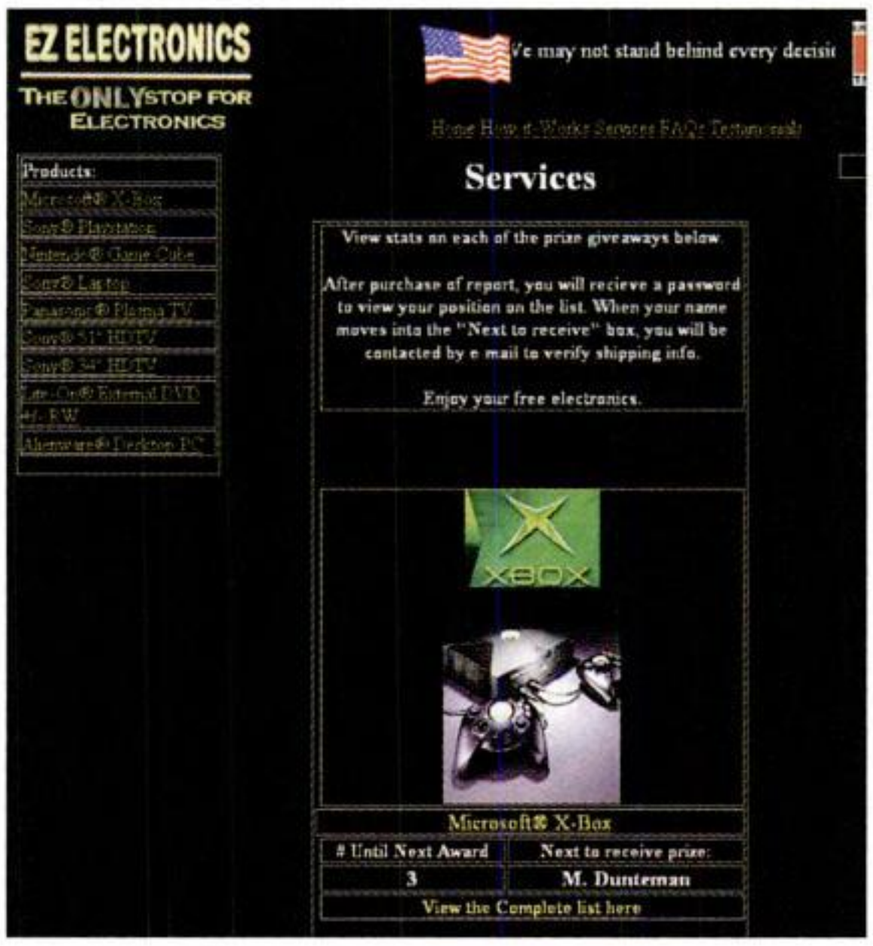
$29 Pyramid

DEAR DOG: EZ Electronics' web site claims that it provides wholesale prices, but how on earth could they sell an Alienware Area-51 PC for 100 dollars? I think you need to warn readers.

—JOSIAH


EZ ELECTRONICS
THE ONLY STOP FOR ELECTRONICS
Products:
Services
View stats on each of the prize giveaways below.
After purchase of report, you will recieve a password to view your position on the list. When your name moves into the "Next to receive" box, you will be contacted by e mail to verify shipping info.
Enjoy your free electronics.
Microsoft® X-Box
Until Next Award
Next to receive prize:
3
M. Dunteman
View the Complete list here

EZ Electronics offered such things as an Alienware PC for $100 and a Microsoft Xbox for $25 if consumers paid for the privilege of being on the product waiting lists.

THE DOG RESPONDS: An Alienware PC for $100? An Xbox for $25? A Panasonic 42-inch plasma TV for $200? The Dog tried to investigate the outrageous claims by first going to EZ Electronics' web site (www.ezelectronics.net), which was temporarily disabled. A Google search however pointed the Dog to some functional pages beyond the home page. It appears that EZ Electronics asked consumers to pay for a "report." According to the web site: "After purchase of report, you will recieve (sic) a password to view your position on the list. When your name moves into the 'Next to receive' box, you'll be contacted by e-mail to verify shipping info. Enjoy your free electronics."

Although it's not entirely clear how EZ Electronics operated its business, Robert FitzPatrick president of PyramidSchemeAlert.org, said it has the characteristics of a pyramid scheme—a form of fraud that's been on the rise on the Internet.

Whether through "gifting clubs," a classic pyramid arrangement, or a straight-line matrix, someone is going to lose, FitzPatrick said. You might be promised the opportunity to recoup your investment plus a handsome profit, FitzPatrick said, but it's all just a mirage.

One web site, Cockeyed.com, works out the numbers based on people who paid $29 to line up for a laptop from another defunct web site that offered people a "cheap" deal. If you're first in line, you won't actually get a notebook until 77 people pitch in $29. If you're the twentieth person in line, 1,540 need to join before you reap any rewards. If you're number 100, 7,700 people must join. You get the idea. Overall, 98.7 percent of the people lose their $29.

FitzPatrick said that while most states have laws against "endless chains," they're not a top priority of law enforcement agencies. The Internet age has spurred tons of quick-cash sites that use pyramid schemes to offer notebooks and other electronics for low prices.

EZ Electronics did respond to two e-mails from the Dog. In one, an unidentified company rep said: "EZ Electronics is closed and will never again reopen. Therefore warning people off has become a moot point. Problems with our payment processing service as well as other difficulties with computer attacks have rendered the site inoperable… without the ability to take orders, the system cannot work. We are proud of the electronics that we have sent out; though, now that we are processing full refunds to our customers, those electronics are coming directly out of pocket. Our intentions are and were pure. However we are limited by our means, so we have chosen to do the honorable thing and clear full refunds at our own expense, rather than the dishonorable thing, which would be to file bankruptcy and steal money from innocent people (as this would go greatly against my personal values)."

The anonymous source did not respond to the Dog's request for details about how the network operated. The Dog did receive another e-mail from a person who identified himself as Michael Dunteman from Ez-Toyz.com who said: "I am the contact for the hosting and domain registration. Ez-Toyz initially held hosting services for several sites, this site was one of several that were hosted by the organization. Unbeknownst to Ez-Toyz, the web site www.ezelectronics.net was registered, paid for, and operated by a minor. Upon that being brought to the attention of Ez-Toyz, via customer complaints, the site was removed and the domain has been maintained for the sole purpose of allowing customers to contact the company for refunds.

"I cannot offer any further insight, as I do not have that information at my disposal. Thank you for your understanding. Please refer any customer inquiries to staff@ezelectronics.net so as to ensure prompt refunds.

"The site for EZ Electronics will not reopen on Ez-Toyz hosting at any time in the future. This user violated our user agreement… in the interest of ensuring that the customers of that site receive their due refunds, we will only host the site for e-mail purposes and not for any new sales. Thank you for bringing the page to our attention. We will ensure that the posting information for the site is changed."

Well that clears things up a bit. ■

Got a bone to pick with a vendor? Been spiked by a fly-by-night operation? Sic The Dog on them by writing **watchdog@maximumpc.com**. The Dog promises to get to as many letters as possible, but only has four paws to work with.

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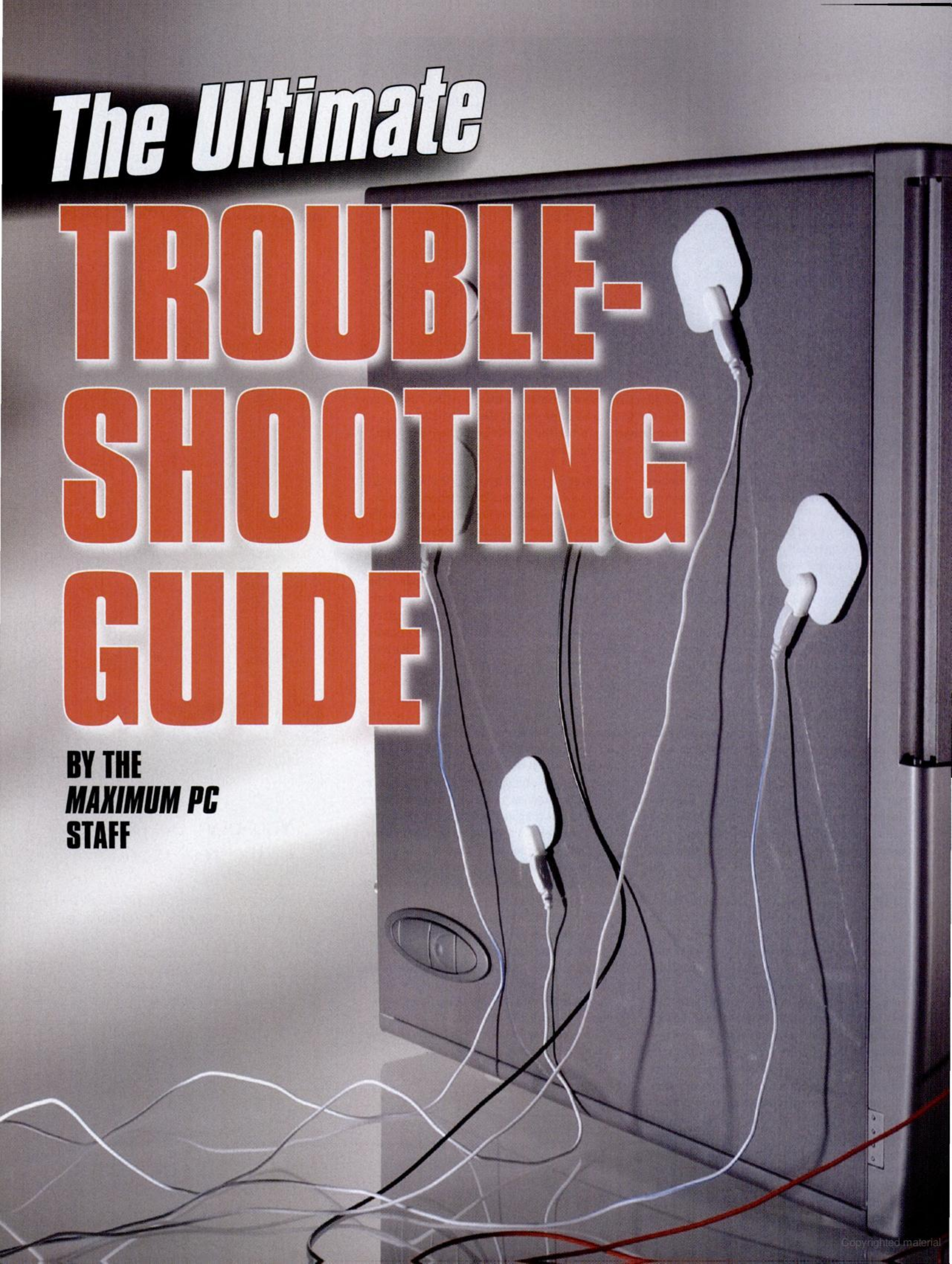
The Ultimate TROUBLE-SHOOTING GUIDE

BY THE *MAXIMUM PC* STAFF



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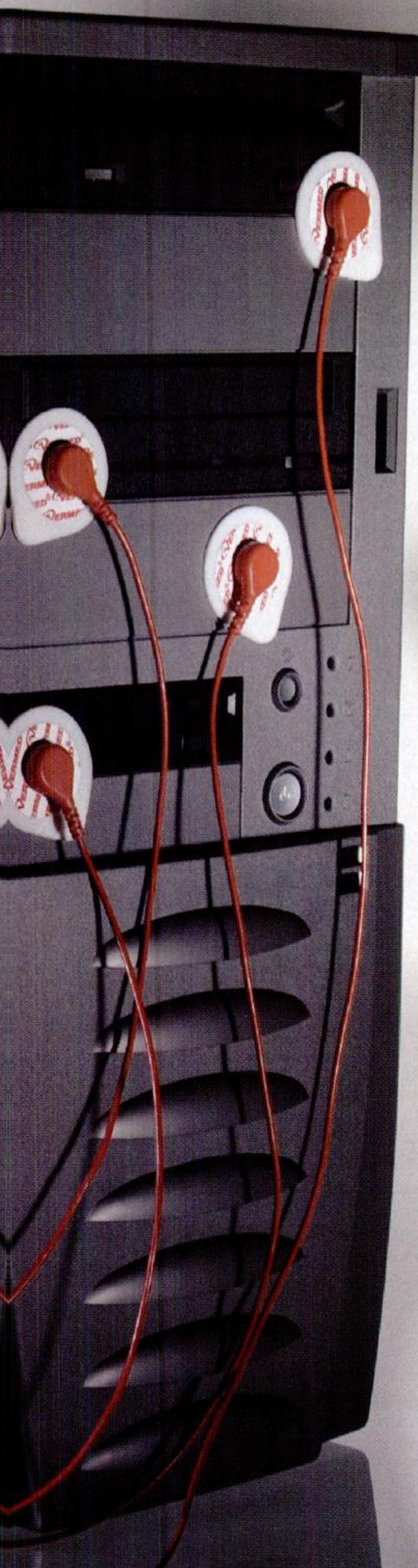

Got PC problems? Maximum PC is here to help with answers to the 34 most common computer ailments!

Our cardinal rules of engagement regarding the troubleshooting of any PC problem can be succinctly stated:

1) Know the symptoms.
2) Isolate any and all variables
3) Double-check the obvious—like cable connections.
4) Diagnose the problem
5) Fix the problem.

If only it were as simple as this. PCs are complex creatures and as such, fixing them is often an arduous, head-banging task that feels more like guesswork than an actual repair.

But with this said, we frequently receive the same questions about the same problems. Thus, we've bundled up answers to the most common questions. So let's dispense with the pleasantries and jump into the problem-solving ASAP, shall we?

GENERAL SYSTEM TROUBLESHOOTING

PROBLEM My fan is whirring loudly. What's up with that?

DIAGNOSIS There are a few possible causes here. The most likely is that your system and fans are clogged with dust, which makes them less efficient. If this is the case, the fans have to work harder to keep up with the load. To fix it, clean your fans.

After you clean your fans, check the temperature around your PC. Some computers get louder as they get hotter because the fans spin faster to keep the system cool. You can fix this by cooling down the climate around your system or by adding fans that are quieter.

PROBLEM I have four pieces of RAM installed and I'm pretty sure that at least one is bad. What's the best way to test RAM for errors?

DIAGNOSIS Since you have four pieces of RAM, you can install just one DIMM in your motherboard at a time and run the machine until it crashes.

This isn't a completely reliable way to test RAM, though. As an alternative, download *Memtest86* (www.memtest86.com) and create a bootable CD. *Memtest86* does a fair job. It runs several test patterns through the RAM. If a piece of RAM passes these tests, swap it with another DIMM and continue your tests.

Even better than *Memtest86* is Ultra-X's *RAM Stress Test Pro 2,* which is a self-booting diagnostic plug-in card. This card uses a comprehensive set of test patterns to assess your memory, and we've found that it finds bad pieces of RAM that other testers miss.

Keep in mind that it may not actually be a stick of RAM that's bad. The problem may in fact be a bad DIMM slot. If all four pieces of RAM pass the test, you may have to rerun them in each individual slot on your motherboard.

Finally, your motherboard's BIOS usually sets RAM timing by reading the SPD setting on the module. If the SPDs are set too aggressively (we've seen this), it may cause problems. You should consider going into the BIOS and manually tweaking settings such as your CAS latency to a more conservative setting. →

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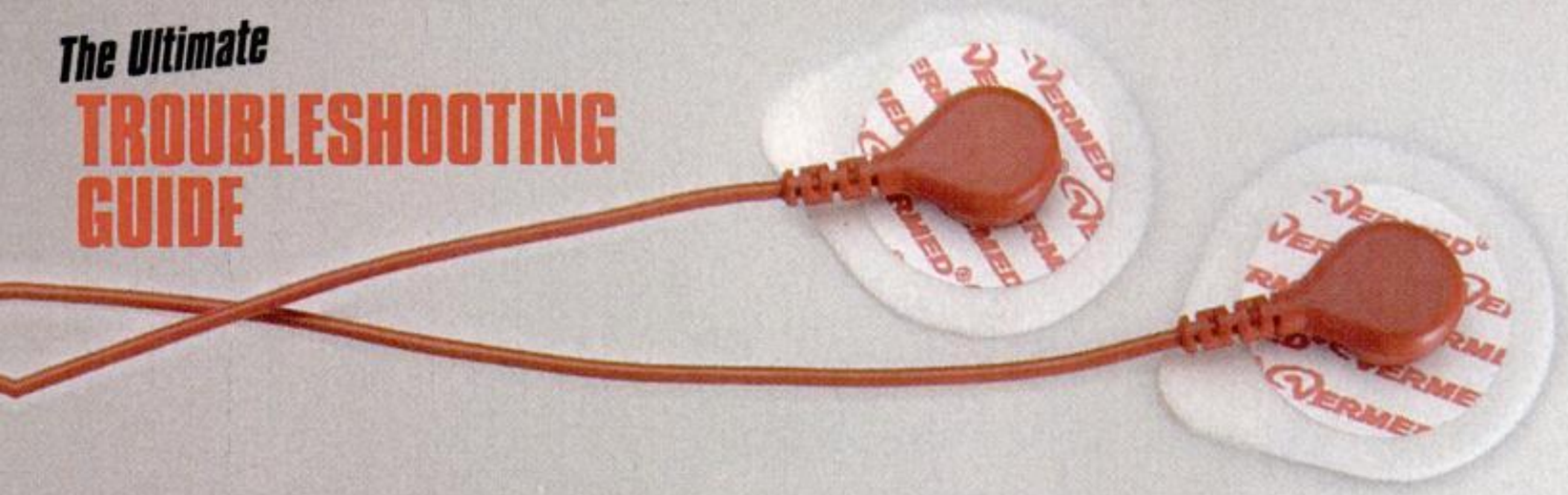
The Ultimate

TROUBLESHOOTING GUIDE



PROBLEM My PC spontaneously reboots.

DIAGNOSIS If rebooting occurs in a PC you just built, try reseating the CPU heatsink or making sure you used the proper thermal paste between the CPU and heatsink. Many times inadequate amounts of thermal paste that have been improperly applied, or low-quality thermal paste can cause spontaneous rebooting as the CPU heats up.

You should also make sure you removed the plastic sticker from the bottom of the heatsink. As dumb as it sounds, it happens. While you're at it, make sure your heatsink is actually approved for your CPU. If, for example, you are trying to use the same all-aluminum heatsink that you bought for your Athlon XP 1600+ on your shiny new Athlon XP 3200+, you should consider a heatsink that's rated for the new CPU.

If your heatsink and thermal paste check out, it's likely the problem is caused by one of the following:

- **OVERCLOCKING:** This is kind of a no-brainer, but if you're overclocking any component, stop doing it or back it down to a "reasonable" level.
- **MEMORY TIMING:** This is also a likely cause of reboots. Dig into your BIOS and set your memory on Auto or at a more conservative setting and see if the reboot problem goes away.
- **OUTDATED BIOS:** Make sure you have the latest BIOS for your board. You can easily determine if your CPU is supported by browsing the BIOS updates of your motherboard vendor. If you are running a P4 Extreme Edition and you notice that it's only supported with the latest BIOS update on your board, this may be the culprit.
- **INADEQUATE POWER:** If you've recently performed a major component upgrade and changed everything on your PC except the power supply, your PSU may be overstressed or simply failing due to age or heat.
- **"FRANKENSTEIN SYNDROME":** Finally, hardware isn't always the cause of spontaneous reboots. If you have a Frankenstein (that's pronounced *Frankensteen*) installation of Windows XP that has moved from machine to machine, or has simply been in use for two or three years, it's time to perform a clean install.

PROBLEM Sometimes when I play games for a long time, my computer just randomly crashes to the desktop.

DIAGNOSIS Random crashes in games can be the result of a few different problems.

Typically, it's a heat issue, a driver issue, or a problem with the game.

The first thing you should do is check for a patch for any of your games that are crashing. It seems like common sense, but frequently we receive complaints from people trying to run games that have been patched three or four times. Once you've updated your games, you need to update your videocard and chipset drivers. Get your videocard driver from the company that manufactured your card's chipset, either ATI (www.ati.com) or nVidia (www.nvidia.com). You should also check for newer drivers for your motherboard's chipset whenever you update your videocard drivers. Outdated motherboard chipset drivers are one of the main causes of general system instability.

If you've updated all your hardware, but are still having problems, you may have a heat issue. Open your case and look at your AGP card. Is there another card right below it? If there is, you should consider moving that card to another slot. A card directly below a high-end videocard can disrupt airflow enough to cause overheating issues with today's top-of-the-line videocards. If freeing the neighboring slot doesn't alleviate your problem, try adding a fan that fits into one of your PCI slots and exhausts hot air from the bottom of your PC.

Hard Drive Hassles

PROBLEM I just got a new Serial ATA hard drive, but when I try to load the image of my current drive onto it, the drive-imaging software doesn't recognize my new hard drive.

DIAGNOSIS This is a problem that has vexed us as well, and it comes down to the fact that most drive-imaging software programs don't recognize Serial ATA controllers and therefore won't let you image the drives connected to it. We've tested practically every imaging program on the market in the Lab, and the only one that successfully moved an image to a SATA drive and made it bootable was Symantec's (formerly Powerquest) *Drive Image 2002*.

PROBLEM I just plugged in a brand-new hard drive but it's not showing up in Windows XP.

DIAGNOSIS All brand-new hard drives are sold unformatted and thus don't show up in Windows until they've gone through the formatting process. To get up and running, connect the drive, boot your PC, and at the Windows desktop right-click the My Computer icon and select Manage. Click Disk Management in the left-hand tree, and every drive connected to your system will show up. Simply right-click your new drive and select New Partition. Then follow the steps to get your drive up and running.

PROBLEM My system crashed, and when I rebooted, my RAID array was no longer working properly.

DIAGNOSIS RAID arrays can stop functioning for several reasons, but it's usually a case of a cable coming loose or something in the BIOS being reset. Serial ATA cables easily come out of their drives, so check them first. If everything is connected properly, you should also check to make sure that the ports your array is plugged into are set to "RAID" rather than "IDE." Because these ports often double as either standard IDE ports or RAID ports, they must be set in the BIOS to one or the other. Be sure to check here first if your array suddenly disappears.

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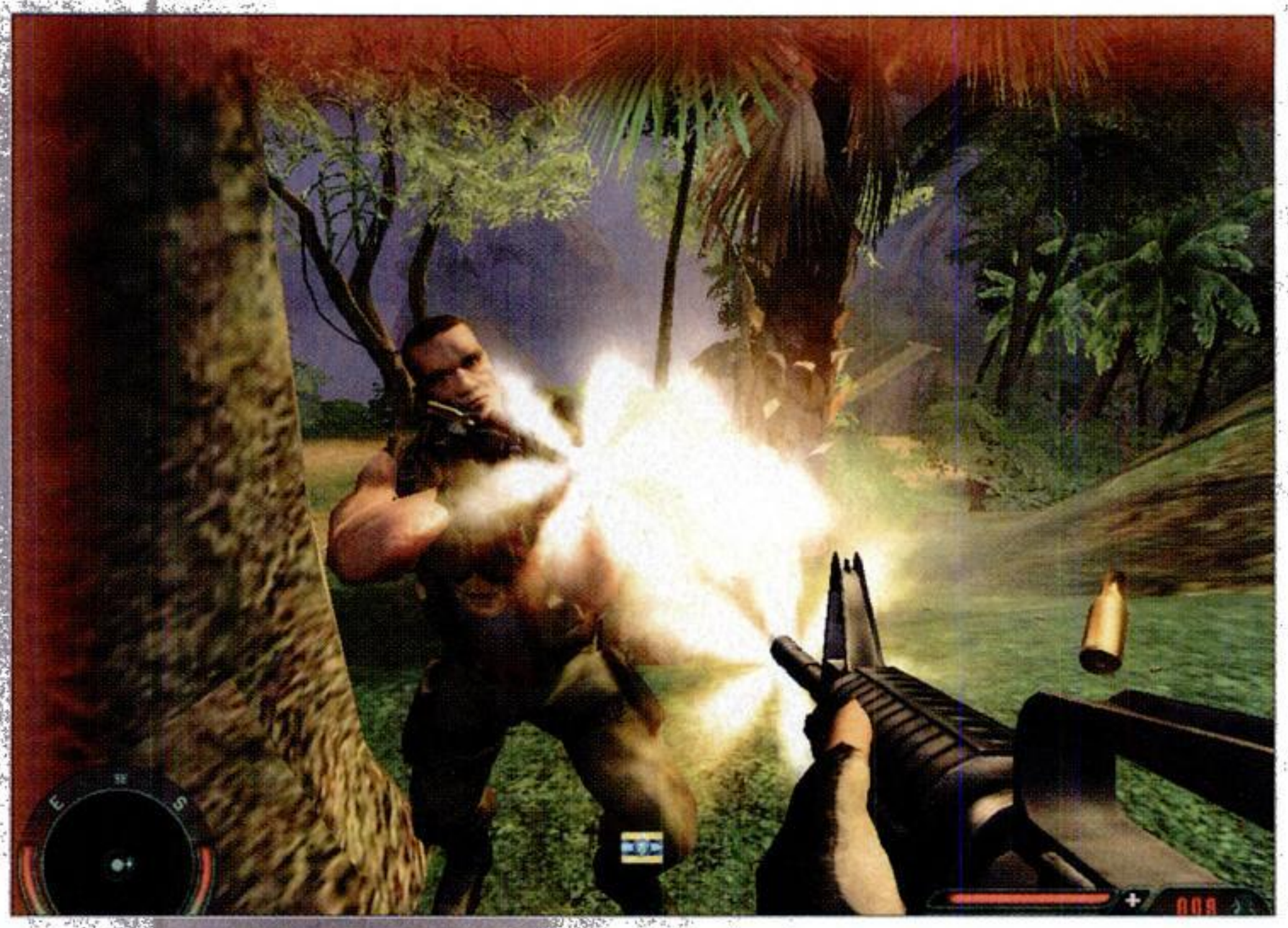

Does your system crash frequently while you play games? It's likely that an overheated videocard is the cause.

PROBLEM My new Athlon XP system is telling me that my brand-new Athlon XP 3200+ is only an Athlon 2200+!

DIAGNOSIS It sounds like your motherboard's bus speed is set incorrectly. You see, you probably bought an Athlon XP 3200+ that runs on a 400MHz bus (which is actually a double-pumped 200MHz bus). For the motherboard to recognize the CPU as a 3200+, the CPU has to run at 2.2GHz, or 2,200MHz. The CPU reaches that speed only if the motherboard is set to an 11 multiplier and with a 200MHz bus. So, 11x200=2200. If your motherboard's frontside bus is set to run at 166MHz, the CPU would boot at 1833MHz. It's no coincidence that this is the same speed as an Athlon XP 2200+. To correct this, reboot your machine and go into the BIOS by hitting DEL or F2 during boot. Look for the section that lets you change the bus speed. Hopefully we're right and it's set for 166MHz. Increase it to 400MHz, save the settings, reboot and you should have a 3200+.

PROBLEM My optical drive has suddenly slowed to a crawl reading discs, and it refuses to read some discs.

DIAGNOSIS Optical drives usually don't expire gradually; most simply stop working without so much as a death rattle. It's much more likely your drive's lens has accumulated a layer of dust.

Get yourself a can of compressed air at the local geek emporium, and eject the disc tray. Spray into the drive with quick, short bursts at an angle (so the dust is more likely to be expelled from the drive). Do *not* spray continuously or with the can upside down, because that could introduce moisture into the drive. Give the dust a minute to settle, and spray the innards again.

PROBLEM I just bought a new PC, and now my Pocket PC refuses to connect via the USB port.

DIAGNOSIS This is a common issue. You'll have to buy a new Pocket PC.

Just kidding. This problem occurs if you plug your Pocket PC in before installing ActiveSync. Check the Device Manager by right-clicking My Computer, selecting Properties, clicking the Hardware tab, and then selecting Device Manager. If you see an Unknown Device entry, delete it by right-clicking it and selecting Uninstall. Restart your PC, install your Pocket PCs drivers from the manufacturer's disc, and plug it in again.

PC AUDIO AND MP3S

PROBLEM I'm only getting sound out of one speaker.

DIAGNOSIS This usually happens when the mini-jack coming out of your speakers is not fully➔

PC Building Woes

PROBLEM I just built a new machine and am experiencing totally random crashes. What are the possible culprits?

DIAGNOSIS Random crashes are always hard to diagnose, so let's cover all the bases. The first area to check is your drivers. Make sure you have the latest drivers for all your hardware, especially the motherboard chipset drivers. You should also make sure you've downloaded all Windows Updates.

Next, consider your power supply. If you're running a midsize 300-watt PSU, and upgraded to a late model Pentium 4 CPU or Athlon FX, or are just running several hard drives and PCI add-in cards, you should upgrade your power supply to a 400 watt or thereabouts model. Inadequate power to your components can cause the entire system to lock up at worst, or just cause certain components to malfunction or stop working.

The final consideration is cooling. Ideally, you should have a decent size fan in the lower front of your case sucking in cool air from outside, and a large exhaust fan above your AGP card to pull air out of the case.

PROBLEM I'm building a new PC and have the motherboard mounted inside the case. When I push the AGP card all the way down in the slot, the end of the metal tab on the slot cover hits the bottom of the case, preventing me from inserting the AGP edge connector all the way.

DIAGNOSIS Even though every ATX motherboard and ATX case should be exactly the same dimensions, there are still small variances that can create problems when transplanting your hardware into a new environment. It's fairly common for the videocard to not quite fit, and when this happens the solution is to simply bend the end of the metal slot cover away from the board ever so slightly. This will afford it the extra millimeter or so of clearance the card needs to fit all the way down into the slot. But be careful!

I know why, night after night, you sit in front of your computer. >

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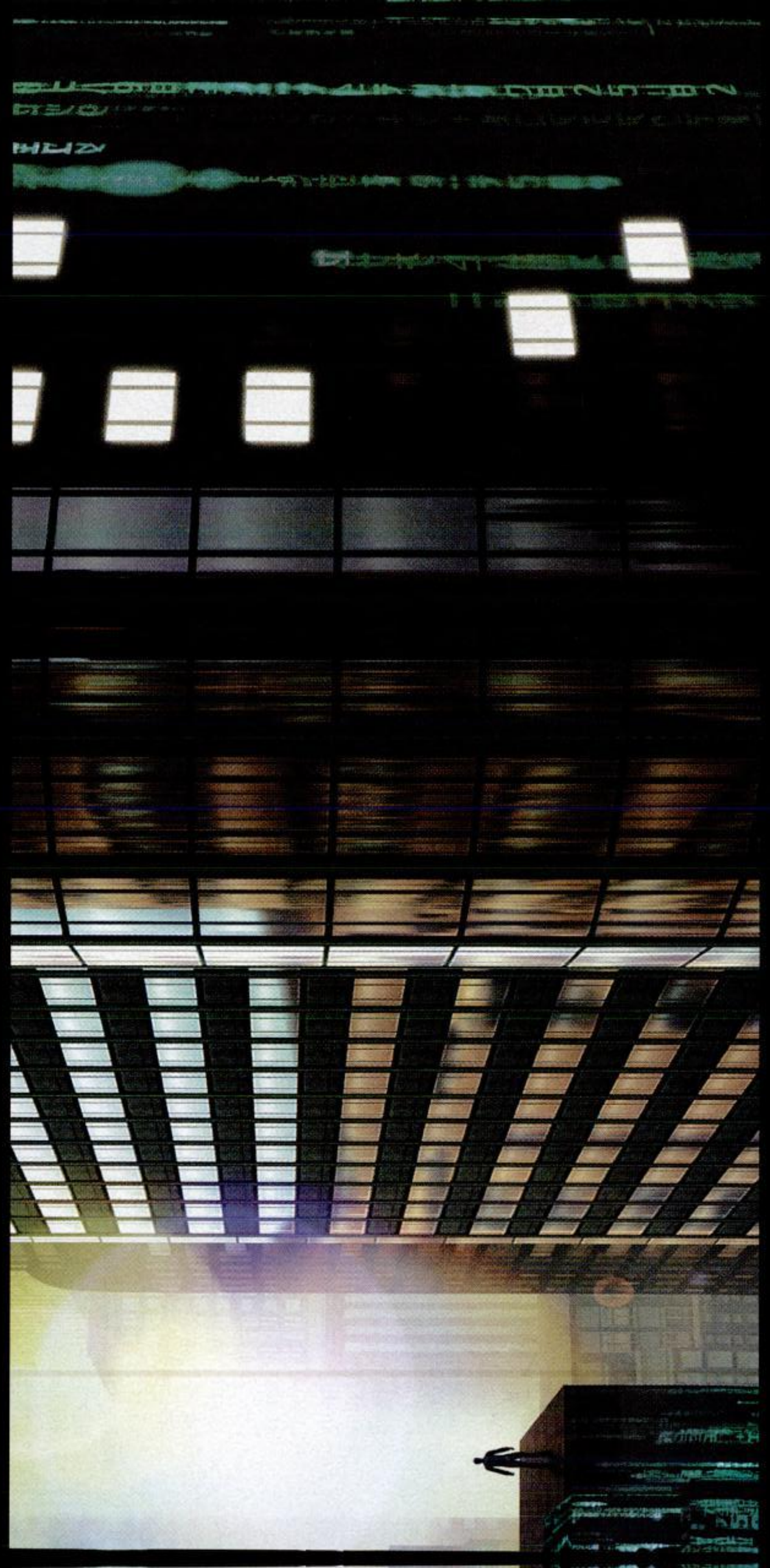

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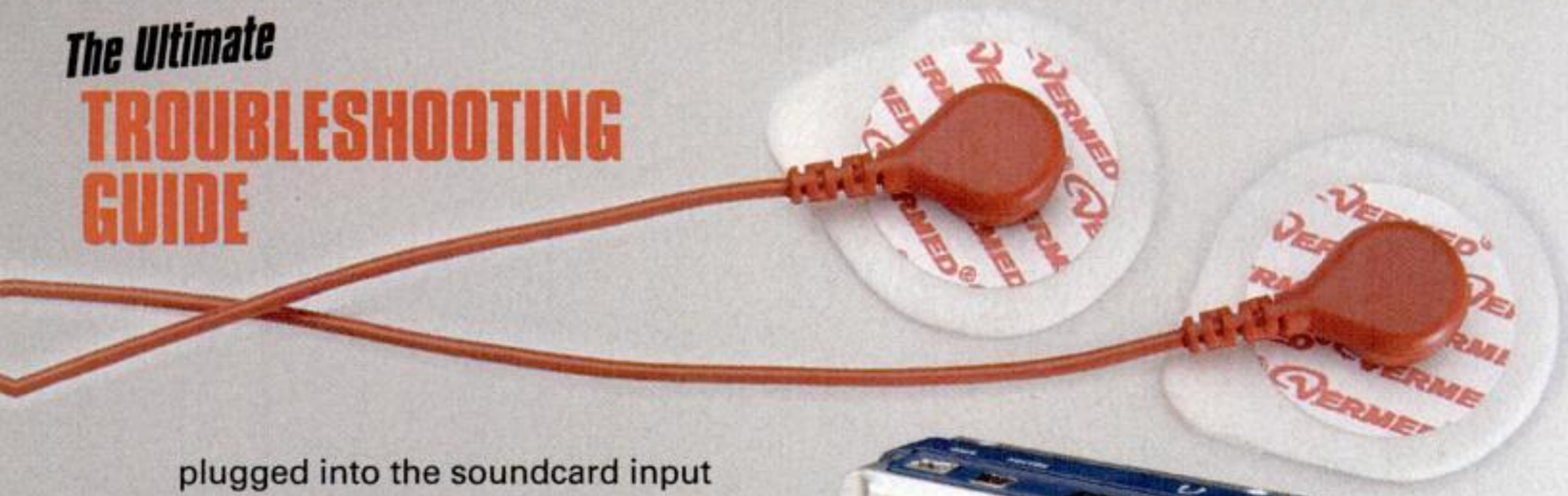


plugged into the soundcard input slot. Reversed polarity of a speaker can cause some weirdness as well, so make sure the positive terminal on the actual speaker is connected to the positive terminal on the subwoofer (or wherever the speakers connect to the amplifier), and vice versa for the negative terminals. One final possibility: Pet owners should routinely check speaker cables for teeth marks and replace the cables when Mr. Bigglesworth eats through the outer layer.

PROBLEM The remote control for my PC speakers suddenly stopped working the other day. I installed new batteries but it still won't work. Is it dead?

DIAGNOSIS Probably not. It sounds more like a sleeping remote. To wake it up, simply remove the batteries and press every button on the remote in a sequential order. Then just replace the batteries and your remote should work again.

PROBLEM Sometimes I'll rip a worn CD, only to find later that some tracks have skips in them.

DIAGNOSIS This is a common problem, and can be easily fixed. Go to **www.exactaudiocopy.de** (don't worry—the site is in English). We've brayed about *Exact Audio Copy* before, and here's why: When *Exact Audio Copy* rips audio, it double-checks the data for accuracy, and if it detects any discrepancies between the original and the rip, it will extract the data again and again until it has determined that the result precisely matches what's on the disc. If the error correction is unable to compensate for a flaw in the disc and the data is irretrievable, *Exact Audio Copy* will let you know, sparing you from unpleasant surprises later. Oh, and did we mention *Exact Audio Copy* is free? Life is good.

If your MP3 player keeps crashing, an improperly encoded song is probably the cause.

PROBLEM My Creative Labs Jukebox Zen Xtra keeps crashing. Is it broken?

DIAGNOSIS If a single bit in an MP3 file is out of place or errant for any reason, it can make many MP3 players lock up or crash. You'll know this is the case if your player crashes on the same track every time. If so, you'll have to remove or re-encode the track.

If an errant track is not the problem—you'll know this is the case because it won't crash on the same song/s—you may be able to rehabilitate your player by reformatting the drive. You'll find instructions at the Creative Labs web site. Go to Support, click Portable Audio, and select "Troubleshooting the Nomad Jukebox 3 as a Standalone Unit" (also known as Solution ID #7392). Reformatting will delete the contents of your player, of course, so make sure you have all your music backed up before you go for it.

PROBLEM I can burn audio CDs and listen to them on my PC, but my portable CD player and car stereo can't recognize them.

DIAGNOSIS Commercial CDs are literally stamped from extruded masters, creating pits and lands that CD players have been designed to read. Burned CDs, however, create darkened areas that mimic the pits and lands of commercial CDs. As you've noticed, not all players—especially older ones—can deal with these kinds of discs. But all is not lost. Your best bet is to burn at a slower speed, 4x or below. This creates slightly more prominent differences between the burned and non-burned areas.

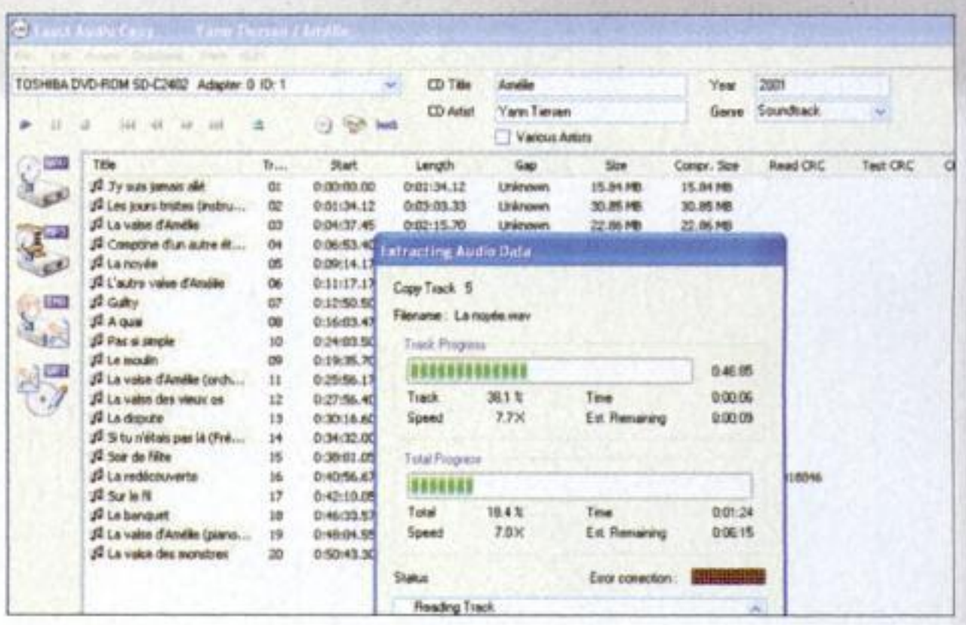
If you have a Plextor burner, though, you have an even better option. The bundled *PlexTools* includes *VariRec*, which allows you to subtly alter the burning strength of your optical drive's laser. By experimenting with various discs and burning strengths, you will almost certainly find the right combination for your CD player. *VariRec* is supported by both *Nero* and *Easy CD Creator*. We've used it to make audio CDs playable on otherwise uncooperative boom boxes. ➔

MP3 Madness

PROBLEM I can't rip songs into the MP3 format using Windows Media Player.

DIAGNOSIS You'll have to purchase a plug-in that enables MP3 ripping. You can find these plug-ins at **www.microsoft.com/windows/windowsmedia/9Series/GettingStarted/Personalization/Plugins.asp**.

But why bother? Just download *iTunes* with its free MP3 encoder, or download *Exact Audio Copy* and the superior LAME MP3 encoder. Both are free and easily located via a five-second Google search.



Experiencing problems with your ripped songs? Try using *Exact Audio Copy*—it flawlessly rips songs. And it's free!

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The Ultimate

TROUBLESHOOTING GUIDE

WI-FI NETWORKING

PROBLEM My wireless laptop will not connect to my wireless router. It can't even see it!

DIAGNOSIS Usually Wi-Fi connection problems are the result of configuration errors, incompatible firmware, or interference with another router.

It's easy to fix firmware issues—all you need to do is download the latest firmware for your wireless router manufacturer's web site. If you've installed the firmware update and still can't connect, your next step is to temporarily disable WEP or WPA. If you can connect to the router when security is disabled, check all your WEP settings. You need to use exactly the same key on your router and any machines that connect to it wirelessly. Also make sure the Authentication Type on each of the PCs matches the setting on the router.

Troubleshooting interference issues is more complex. First, you should move your router off of the default channel. Most routers shipped today are set at channel 6 by default, and the sheer traffic can create a lot of interference. You should also uncheck the field that says, "Automatically connect to non-preferred networks"—there is no advantage to the feature and it can cause your computer to behave erratically if you're in the proximity of other networks.

If you're still having problems connecting, there may be a hardware problem on your laptop. Check Device Manager and make sure there isn't an exclamation point beside your Wi-Fi card. You should also try connecting to another router that you know works properly. Finally, try connecting to your network using the same settings, but a different brand of Wi-Fi card.

If all else fails, contact your router manufacturer's tech support line. You may actually have a faulty router.

PROBLEM My broadband connection feels like it's downloading really slow.

DIAGNOSIS Sadly, there isn't much you can do to improve your broadband connection's performance without spending more money to upgrade your existing service. Sure, there are a whole lot of products out there that claim to "improve your broadband speed" but we don't know of anything that actually works.

If your performance is significantly slower than the advertised claims of your provider, you should complain to your ISP. For services advertised as full-speed, we expect a minimum of 50kB/s download speeds and prefer to see our speeds top out over 100kB/s. If you are paying for a high-speed broadband connection, but are seeing less than 50kB/s downloads, you should switch ISPs!

Disabling the Wireless Zero configuration service can stop your wireless connection from dropping randomly. Unfortunately, disabling the service will also stop your PC from automatically configuring Wi-Fi access when it "sees" new access points.

PROBLEM My wireless laptop keeps "detecting" wireless networks in my house. Every time it does this, it drops my existing connection until I reconnect. How can I prevent this from happening?

DIAGNOSIS Nearly everyone on the *Maximum PC* staff has experienced this problem at one time or another, and we've had varying levels of success fixing it.

The first thing you should do is open the Properties page for your Wi-Fi card, go to the Wireless Network tab, and click Advanced. Uncheck "Automatically connect to non-preferred networks." This will prevent your machine from automatically connecting to your neighbors' networks.

If your router is configured in a stealth mode so as not to broadcast your SSID, this can sometimes confuse Windows's built-in Wi-Fi configuration tool. We recommend disabling any options that prevent your router from broadcasting your SSID.

If that doesn't fix your problem, wait until your machine is connected successfully, then go back to your Wi-Fi card's Properties pages and uncheck "Use Windows to configure my wireless network settings" at the top of the tab. After that you should also go to Start, Control Panel, Administrative Tools, Services, and disable the Wireless Zero Configuration service. That will prevent Windows from automatically switching your machine to unwanted wireless networks, but it will also prevent you from connecting to any other Wi-Fi LANs—like the ones at Starbucks or your office.

If you have a sure-fire, works-every-time solution to fix this wireless networking problem, we want to hear it! Send it to input@maximumpc.com.

PROBLEM I can't see the other computers on my home network from my laptop. What can I do to make it work right?

DIAGNOSIS First, you need to make sure that each computer you want to connect to belongs to the same workgroup. Open the Start Menu and right-click My Computer. Go to Properties, then Computer Name. If your workgroup name doesn't match, you can change it by clicking the Change button. Some versions of Windows only show the computers that actually have shared folders or printers, so make sure you have at least one folder shared on every computer you're trying to connect to.

The next step is to disable your firewall. By default, most firewalls block the ports used by Windows networking, keeping even legitimate users—like you—from connecting to your machine.

If all your machines use the same workgroup and your firewalls are disabled, and you're using a wireless router, your problem could be the router. If your wired machines can all see each other and your wireless machines can see each other, but a wired machine can't see a wireless machine, it's almost certainly the router's fault. Barring a firmware update that fixes the problem, there's no easy way to connect your machines if this is the case. Check with your router manufacturer for a newer version of the firmware. If that doesn't work, you may need to get newer hardware.

Here's one last tip: You can try to connect to your computer's specific IP address instead of its name. To find the IP address, go to the Network Connections control panel, right-click your network card, and select Status. The IP address is on the Support tab. Once you have the IP, you can go back to your other computer and put // IP.Address.here/ into Explorer. If you have shared folders on the PC you're trying to connect to, they should pop up immediately. ➔

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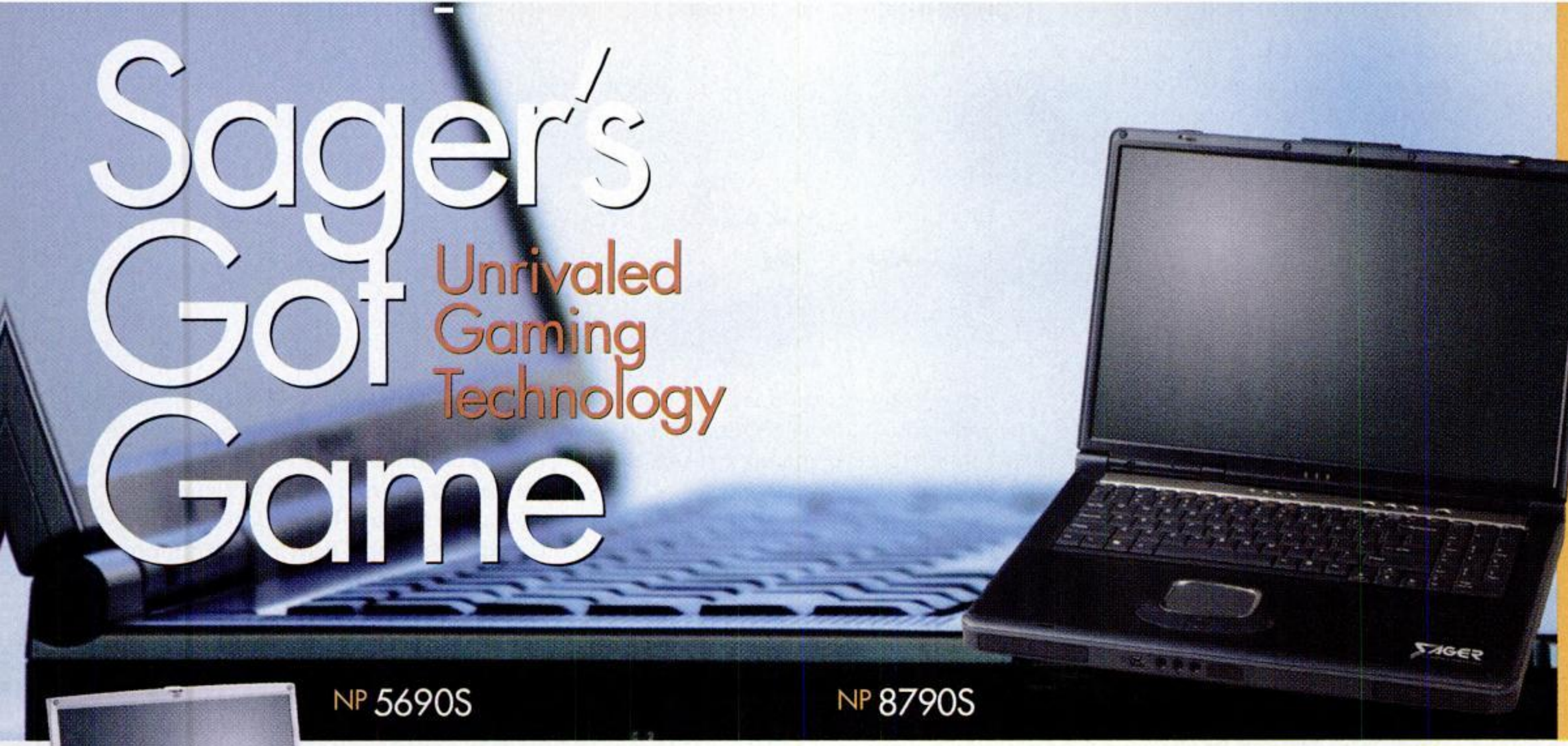

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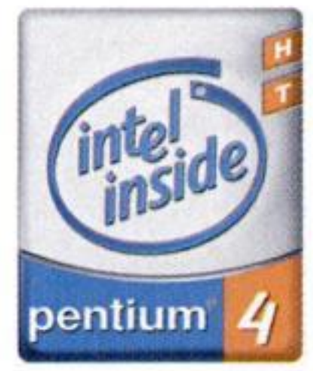

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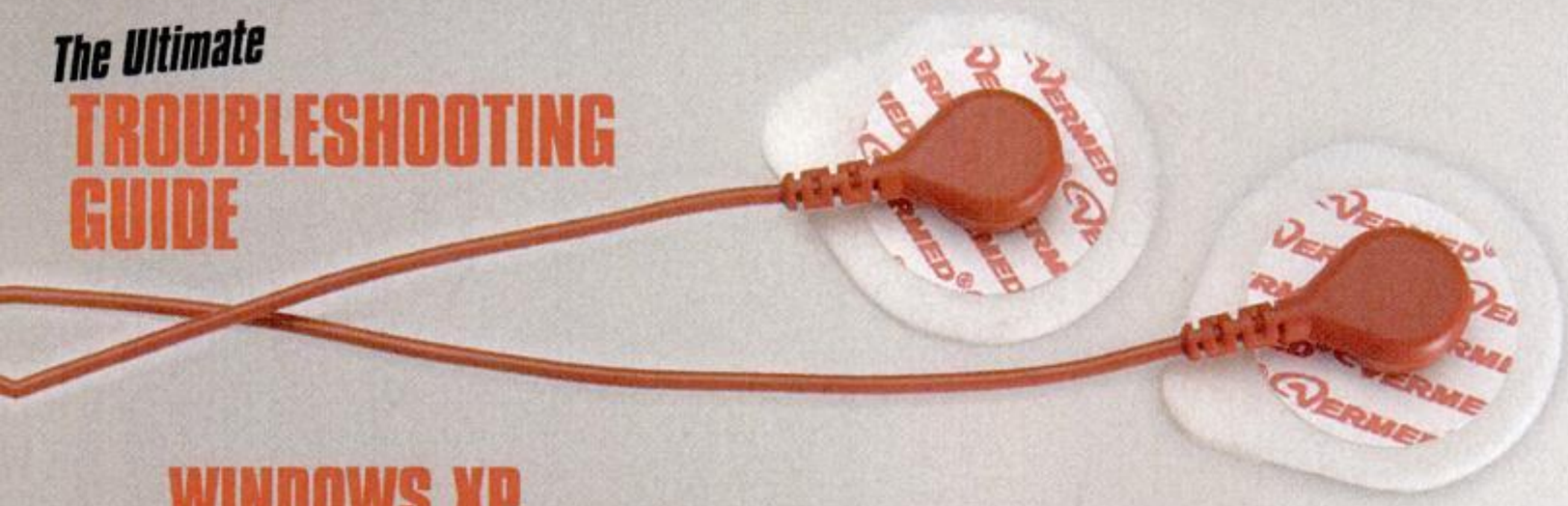

WINDOWS XP

PROBLEM My computer is acting odd. Loads of windows open all the time, and I'm getting a bunch of popup windows that don't look like *Internet Explorer* windows.

DIAGNOSIS Your problem is most likely caused by incoming Messenger service messages. In a networked corporate environment, Messenger is used to send time sensitive messages about server outages, and software updates, but there's really no reason to leave Messenger running at home. To disable it, go to Start, Control Panel, Administrative Tools, and then Services. Scroll down to Messenger, right-click it, and select Properties. Change the Startup Type to Disabled and then press OK.

Note that this Messenger service is different from *Windows Messenger*. You can disable this service and still receive instant messages!

PROBLEM A couple days ago, my computer began behaving very oddly. The disk runs a lot, even when I'm not using the computer, and my browser homepage is reset to a site I've never been to before.

DIAGNOSIS This sounds like a classic case of spyware infection. There are two apps we recommend for combating spyware: *Spybot Search & Destroy* and *Ad-Aware*. You can download Spybot from www.safer-networking.org and get *Ad-Aware* from www.lavasoft.de. Both applications scan your hard drive for potential spyware and will help you remove it if detected. We recommend using both apps, because sometimes one application will detect a new spyware program that the other won't.

If one of the applications detects spyware on your PC, it will either automatically remove it, or give you instructions that allow you to remove it.

PROBLEM My e-mail frequently stops working—it often stalls when receiving and sending. And no matter how many times I change the e-mail settings, it reverts to "localhost."

DIAGNOSIS There's an outside chance the problem could be a virus, but the most likely culprit is your antivirus program or your spam filtering program. These apps work by situating themselves between your mail program and your e-mail server, then taking a look at every piece of mail you receive. But if one of those programs crashes or needs input from you, it will hold up the e-mail download and your mail program will think the connection has died. If this happens, just restart your antivirus program and spam filtering program and try downloading messages again.

PROBLEM I keep losing menu options in Microsoft *Word*.

DIAGNOSIS Our bet is that you really like to use em-dashes. The default keyboard shortcut for an em-dash is Ctrl+Alt+the numpad Dash, but people often mistakenly press Ctrl+Alt+ the Dash on the primary keyboard, which is the default keyboard shortcut for "Remove item from the menu." After you call up that shortcut, your cursor will change to a bold minus sign and the next menu or shortcut you click will disappear from *Word*.

The solution? Don't use so many em-dashes! Alternately, you can remap the em-dash shortcut to something a little more convenient. Go to Tools, Customize, Commands, and click the Keyboard button. Then, under Categories, scroll down to Common Symbols and click Em-dash in the right pane. Change the hotkey to whatever you'd like. We like Ctrl+M.

To get back the menu items that you've lost, go to Tools, Customize, Commands, and drag the elusive commands back into place.

PROBLEM I keep accidentally e-mailing my friend at her old address because the program created a shortcut for me.

DIAGNOSIS This is an easy fix. When you're typing the name into your To: field, scroll up and down until you get to the one you want to delete. When it's highlighted press the Delete key and it will be gone forever!

PROBLEM I get a ton of spam every day.

DIAGNOSIS There are a couple really good, free anti-spam utilities available today—*SpamPal* (www.spampal.org) and *Popfile* (popfile.sourceforge.net). They use slightly different approaches, but each can reduce your spam intake by up to 99 percent. SpamPal analyzes every e-mail you receive and compares the path it took across the Internet with the servers and IP addresses of known spammers. It's very effective right out of the box, but if you frequently receive e-mail from countries where spam is known to originate, such as China, Russia, and Taiwan, or from webmail services like Yahoo, which are frequently abused by spammers, you may see a lot of false positives.

On the other hand, *Popfile* uses a technique called Bayesian filtering to determine which letters are spam based on the content of your e-mails. Every time you mark a message as spam, the contents of message are added to the database. This is highly effective once the filters are fully trained, but it can take several weeks of flagging each incoming message as spam before you start seeing greater than 90 percent accuracy.

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The 6 Most Common WinXP Annoyances

Take charge of your OS with these quick fixes

AUTOPLAY

By default, Windows will automatically play or open any disc you put into your optical drive. Either the OS will automatically load media into its preferred player, or it will open a dialog box asking what you want. It's one of those neat features that aims to be convenient but can actually be extremely annoying.

Thankfully, there's an extremely flexible way to fix this little feature. Microsoft's *TweakUI* (conveniently available as part of Microsoft's *PowerToys* add-on for WinXP, which can be found on Microsoft's web site), has tons of handy tweaks for fixing annoying Windows quirks just like this one.

In *TweakUI*, open the Autoplay menu under My Computer and you'll find a set of menus that lets you enable or disable Autoplay for certain drives, and even customize your Autoplay choices for different types of discs.

You can use *TweakUI* to customize—or remove—WinXP's Autoplay settings.

ERROR REPORTING

Windows wouldn't be Windows without some kind of irritating display every time a program crashes. In WinXP, it's Windows' offer to report crashes to Microsoft. You can easily turn these off. Right-click My Computer and click Properties. Under the Advanced tab, click Error Reporting and you'll see a menu that lets you set error reporting for just specific programs, or turn it off entirely.

THE DISAPPEARING INTERNET EXPLORER STATUS BAR

While you can bring the status bar back by clicking Status Bar in *IE's* View menu, it's irritating when you have to do it with every single window. Here's a functional, if somewhat convoluted, fix.

Open *Internet Explorer* and make sure the status bar is visible. Hold Ctrl and close *Internet Explorer.* This forces Windows to remember your viewing settings for that window. Open Windows Explorer (not *Internet Explorer*) by right-clicking a folder and clicking Explore. Make sure Windows Explorer's status bar is visible by checking it in the View menu. Open the Folder Options dialog box from the Tools menu and click the View tab. Click the button marked "Apply to all folders" and close the dialog. Hold Ctrl and close the application. Now any time you open new windows in *Internet Explorer* the status bar will be there.

FILE ASSOCIATIONS

Sometimes file associations can get mixed up. New programs often take control of files, hijacking the association to their default, preferred programs.

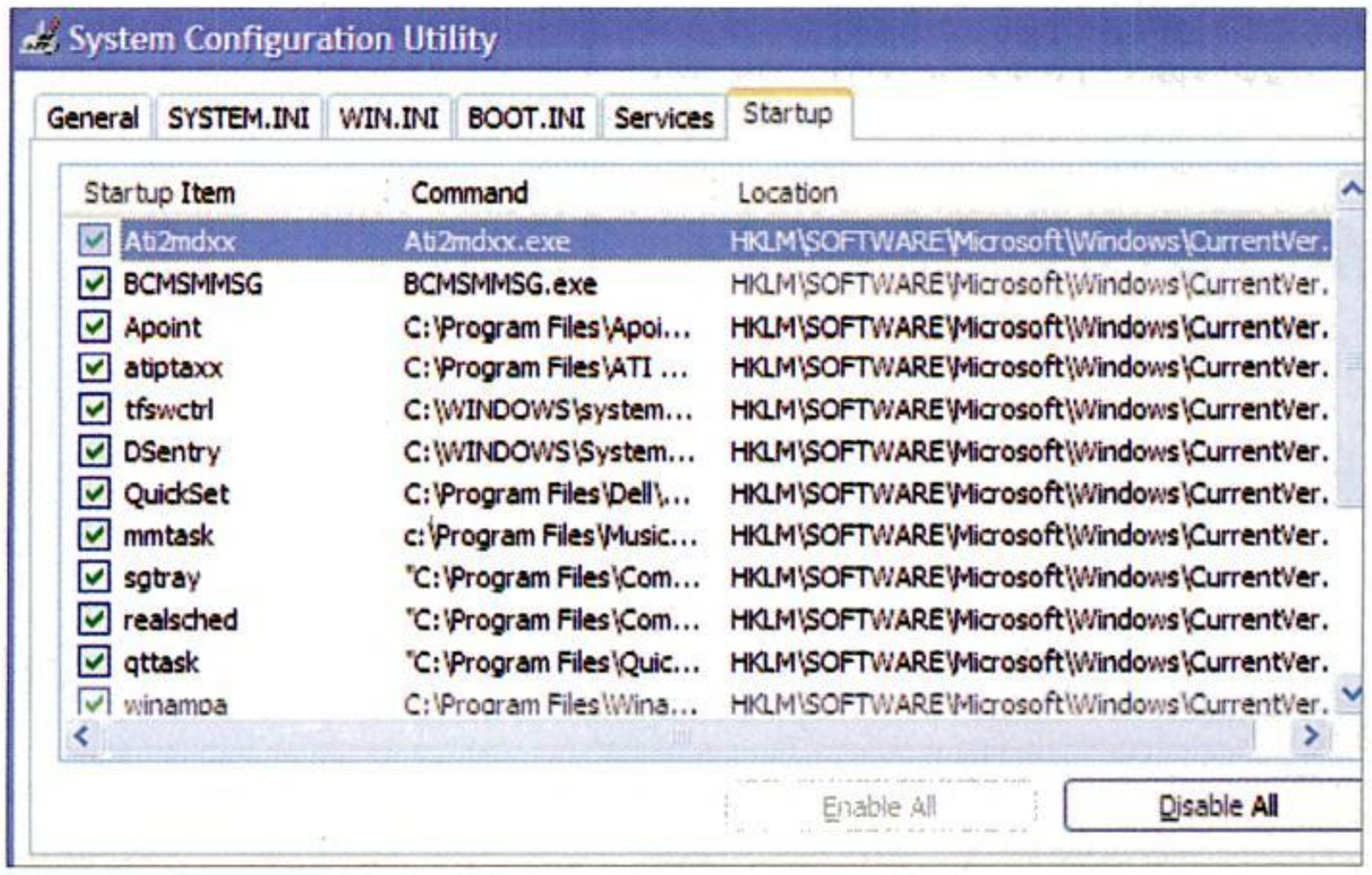
Fortunately, you can fix these fickle file fixations easily. All you have to do is right-click any file of the offending type and click "Choose Program..." under the Open With menu. You'll get a dialog box that lets you choose which program opens that type of file. Check the box marked "Always use the selected program to open this kind of file" to ensure you don't have to go through the arduous process again.

INCOMPLETE UNINSTALLS

Sometimes—who are we kidding, *many times*—programs don't completely uninstall. The files are deleted and their Registry keys are removed, but their ghosts haunt the Windows Add/Remove Programs menu. Exorcise these demons by opening the Registry Editor (click Run in the Start menu and type `regedit`). Go to HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Uninstall to find all the programs listed in the Add\Remove Programs menu. Delete the keys to programs you don't have anymore, and they will never haunt your menu again.

SLOW WINXP BOOT TIMES

Windows can get bogged down when too many programs load at startup. Many of them can be disabled by simply deleting them from the Windows Startup folder, but some are trickier, hiding in the depths of the Registry. Open the Run menu and type *msconfig.* This handy little configuration program lets you choose what runs when Windows boots. ■



MSConfig lets you tweak the fine details of how Windows boots.

BROWSER BOOSTERS

Firefox, Mozilla's next-generation browser, is far more powerful than *Internet Explorer*. *Maximum PC* presents 13 ways to make it even better. Your web browsing will never be the same after you use this collection of upgrades, tweaks, and hacks!

By E. Will Greenwald

"The browsers clashed, and so *Netscape* was smited by *Internet Explorer*, and the progeny of Microsoft reigned over the land. But lo, for *Netscape* had a brother, and that brother was named *Mozilla*. And *Mozilla* begat the mighty *Firefox*, and *Internet Explorer* trembled in fear."

If there were an Internet Bible, this would be the latest passage in the Book of Browsers. *Netscape* and its *Mozilla* offshoot have long been regarded as the ugly cousins of *Internet Explorer* ever since Microsoft won the browser war of the 1990s. Open source coders working on *Mozilla* never quite gave up, though, and they ultimately created a full-featured, immensely expandable web browser that quite simply kicks ass.

A longtime favorite of the *Maximum PC* staff—we named

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it our favorite software application of 2003—*Firefox* is Mozilla's ongoing next-generation web browser project. Rather than trying to be a Jack-of-all-trades and loading the browser with features most people won't ever use, *Firefox* provides a strong core with useful touches like tabbed browsing—which allows you to scan through multiple web sites within the same browsing window—a pop-up blocker, and immunity to malicious VBScripts and ActiveX controls. Add an extremely flexible extension system that allows users to pick and choose their own add-ons, and you've got a very attractive browser. And still you're at just the tip of *Firefox*'s iceberg of goodness.

Through plugin-like extensions, independent developers have created a slew of browser tweaks, web development tools, and even games that integrate with *Firefox*. These extensions let you edit a site's CSS on the fly, search Amazon's product database with a kiosk-like interface, or even browse by simply swishing your mouse back and forth.

Here are our favorite *Firefox* extensions. Some are handy, some are funny, and some are absolutely essential. Note: The following extensions were originally tested with *Firefox v0.8*. As of press time, Mozilla had just released v0.9 of the browser. It's almost certain that the extensions mentioned here (or facsimiles thereof) will be ported to the new browser in little time. We have indicated the extensions we know for a fact to be v0.9-compatible as of this writing. To download *Firefox*, go to **www.mozilla.org.**

ALL-IN-ONE GESTURES

Control your browser with gestures, not clicks

Mouse gestures are the latest craze to hit web browsers. Instead of clicking toolbar buttons, you control your browser with elegant swipes of the mouse. By holding down the right mouse button and drawing symbols with the cursor, you can command the browser to go back a page, open a new tab, or any one of a number of commands.

All-in-One Gestures is the *Firefox* extension that enables these handy little mouse gestures. It's completely customizable, and lets you assign almost any gesture to almost any browser function. After a bit of practice you'll be laughing at the clunky, snail-like browsing of your old-school colleagues.

AUTHOR: MARC BOULLET

VERSION 0.9 COMPATIBLE

FIRESOMETHING

Give Firefox a new name every time you open it

Remember when *Firefox* was called *Firebird*? How about when it was named *Phoenix*? Who can guess what other names Mozilla's next-gen browser will be forced to adopt because of trademark considerations before it reaches the big v1.0?

Firesquid? How about Lightning Pony? Or maybe Moonstarfish? Thanks to *Firesomething*, you no longer have to lie awake at night wondering what your browser's next name will be—you can find out every time you open a new window.

Firesomething randomly generates a name in your browser's title bar every time you load *Firefox*. Instead of Mozilla Firefox, your browser might say Mozilla Wateryak, or Mozilla Moonkangaroo. It's not the most useful extension, but it does lend a nice bit of variety to the web browsing experience.

AUTHOR: MICHAEL O'ROURKE

VERSION 0.9 COMPATIBLE

TABBROWSER EXTENSIONS

Enhance tabbed browsing

It's hard to improve on an already great feature, but *Tabbrowser Extensions* does just that. It takes *Firefox*'s beloved tabbed browsing feature—which allows you to scan through multiple web sites within the same browsing window—and gives it a nice big shot of what we like to call usefulcillin. With *Tabbrowser Extensions*, you can highlight, duplicate, and even drag and drop your tabs. It supports automatic refreshing for specific tabs, and can even bring a tab back to life after you've accidentally closed it. It's a great addition to *Firefox*'s already excellent tabbed browsing functionality.

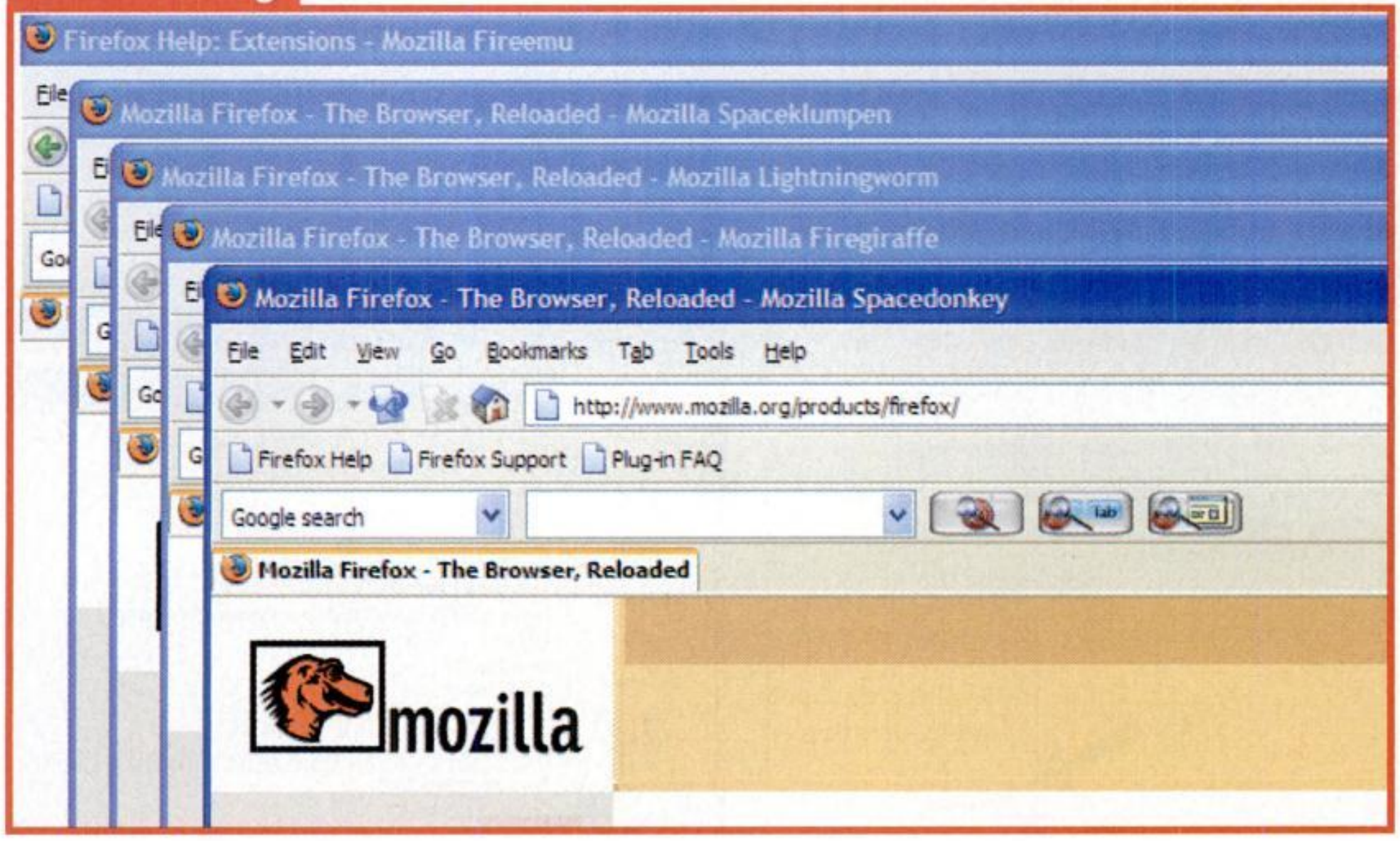
AUTHOR: SHIMODA HIROSHI

ADBLOCK

Block all web ads

Firefox comes with a capable pop-up blocker, but it won't protect you from every ad. Sure, you might not see another annoying, unwanted pop-up, but that won't stop the minivans driving across your home page, →

Firesomething


Firefox Help: Extensions - Mozilla Fireemu
Mozilla Firefox - The Browser, Reloaded - Mozilla Spaceklumpen
Mozilla Firefox - The Browser, Reloaded - Mozilla Lightningworm
Mozilla Firefox - The Browser, Reloaded - Mozilla Firegiraffe
Mozilla Firefox - The Browser, Reloaded - Mozilla Spacedonkey
File Edit View Go Bookmarks Tab Tools Help
http://www.mozilla.org/products/firefox/
Firefox Help
Firefox Support
Plug-in FAQ
Google search
Mozilla Firefox - The Browser, Reloaded
mozilla

Maybe Mozilla should have named its next-gen browser *Project: Element-Animal*.

begging you to punch him. *AdBlock* remedies this situation by adding a slew of advertisement-blocking features.

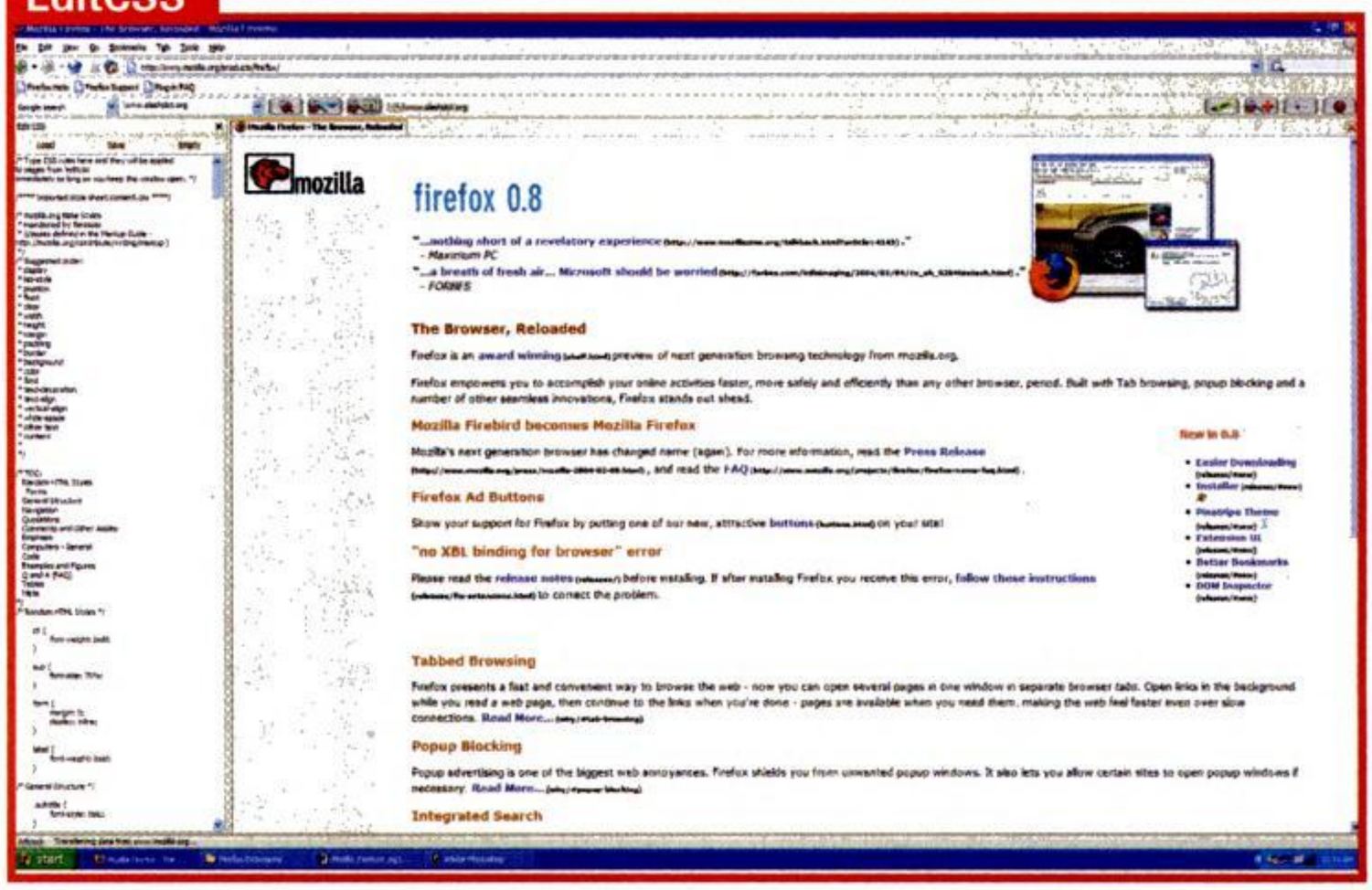
Once installed, this handy extension displays a button in the corner of any potential ad. With a few clicks, you can block just that ad, or any ad from that server, or any ad of that size. It works on JPEGs, GIFs, and even *Flash* files. Talk about useful.

AUTHOR: THE ADBLOCK CREW
VERSION 0.9 COMPATIBLE

EDITCSS

Rearrange your site—or someone else's—in real-time

Commonly known as CSS, cascading style sheets have taken over the web. They control the vertical and the horizontal, the italic and the bold, the header and the div. He who controls the CSS controls the page, and he who uses →


EditCSS
mozilla
firefox 0.8
"...nothing short of a revelatory experience
- Maximum PC
"...a breath of fresh air... Microsoft should be worried
- FOSNEWS
The Browser, Reloaded
Firefox is an award winning preview of next generation browsing technology from mozilla.org.
Firefox empowers you to accomplish your online activities faster, more safely and efficiently than any other browser, period. Built with Tab browsing, popup blocking and a number of other seamless innovations, Firefox stands out ahead.
Mozilla Firebird becomes Mozilla Firefox
Mozilla's next generation browser has changed name (again). For more information, read the Press Release, and read the FAQ.
Firefox Ad Buttons
Show your support for Firefox by putting one of our new, attractive buttons on your site!
"no XBL binding for browser" error
Please read the release notes before installing. If after installing Firefox you receive this error, follow these instructions to correct the problem.
Tabbed Browsing
Popup Blocking
Integrated Search

***EditCSS* lets you remix web sites like the best HTML DJ, and learn something about HTML and web style sheets in the process.**

WHERE CAN I GET ALL THESE EXTENSIONS?

On the Internet, that's where!

Firefox extensions may be mind-blowingly useful, but you need the *Firefox* browser to take advantage of them. Thankfully, *Firefox* is available free from Mozilla's web site (**www.mozilla.org**). Keep in mind that while it's extremely stable and many *Maximum PC* staffers swear by it, *Firefox* remains a "pre-release" version, which means it doesn't work perfectly. Mozilla insists that *Firefox* is intended as a "technology preview," and guarantees nothing as long as the browser version is less than 1.0. That's OK—we still think it's great.

As of this writing, *Firefox v0.9* was just released, and it looks to offer even more stability and control than its predecessor. While the majority of extensions at this time are for v0.8, we expect to see our favorites updated for *Firefox 0.9* in the near future.

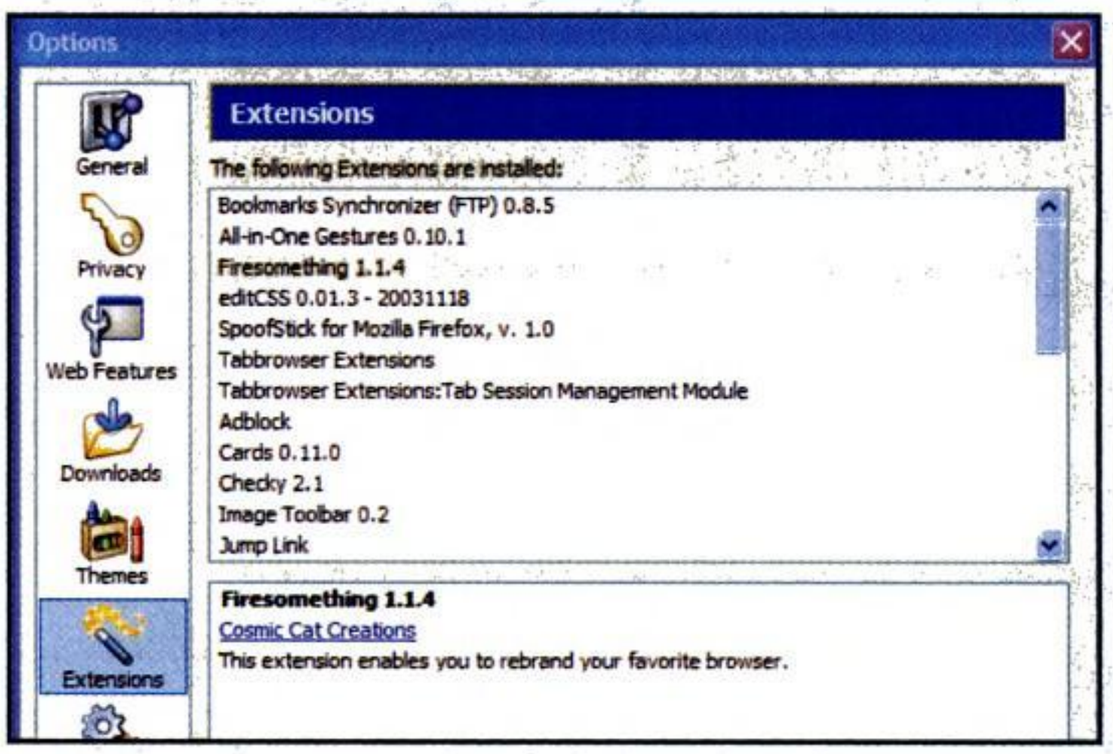
Most extensions can be found at the Firefox Extensions page on **Texturizer.net**. There, simply click the install link of the extension you want, and accept it as if it were a browser plug-in. The extension will install automatically, and should appear as soon as you restart the browser. Extensions for v0.9 are available at **www.update.mozilla.org**.

You can manage your extensions in *Firefox*'s Options menu. Click Options, then click the Extensions button. You can enable or disable various extensions, and modify specific settings in each one's option menus.

Firefox's extension system is still in development, and can be finicky at times. Some extensions can conflict with others, rendering the entire browser unusable. For example, *All-in-One Gestures* may start to act funky if you load another mouse gesture extension like *Optimoz Tweaks* or *RadialContext*. Keep similar extensions to a minimum, and disable them if you think there might be a conflict.

Be wary when installing extensions. Many are useful, but much like *IE's* ActiveX controls, it's possible to damage your browser or system by installing a malicious *Firefox* extension. We've yet to see i happen, but if *Firefox* continues to grow in popularity, it won't be long before we see spyware coded specifically for Mozilla. Extensions available on **Texturizer.net** are considered safe, though, and we've personally tested every single one mentioned here.

Click "Install," and ignore that pesky "unsigned" stuff.



***Firefox's* Options menu will let you control or disable most of your extensions.**

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BROWSER BOOSTERS

EditCSS controls the CSS.

EditCSS is a radical little extension that lets you edit any site's CSS, then see how your changes affect the site in real-time. You can rearrange elements, alter text formats, and turn any page into the nastiest beast or the prettiest beauty with a few keystrokes. *EditCSS* is perfect for web developers who want to find just the right look for their pages, or inquiring minds who just want to understand what this whole CSS thing is all about.

AUTHOR: PASCAL GUIMIER

NEEDLESEARCH

Use multiple search engines at the same time

NeedleSearch is like a search toolbar on steroids and caffeine. Other search toolbars might let you search Google for web sites and images, but not many let you look up PHP functions—a form of scripting used on the web. *NeedleSearch* can search the web, domain names, phone books, and even development databases. It supports Google, AnyWho, Devguru, Sourceforge, and several other search engines and specialty sites.

The toolbar is expandable, and the built-in editor lets you add your own favorite search engines to its list. Enter the engine's name, search URL, encoding and input method, and you'll see your own search engine on the toolbar. If that's not enough, *NeedleSearch* includes context highlighting. Enter any word into the search bar, click the highlight button, and every instance of that word on the page is highlighted in bright yellow.

AUTHOR: EELCO VAN KUIK

MOZILLA AMAZON BROWSER (MAB)

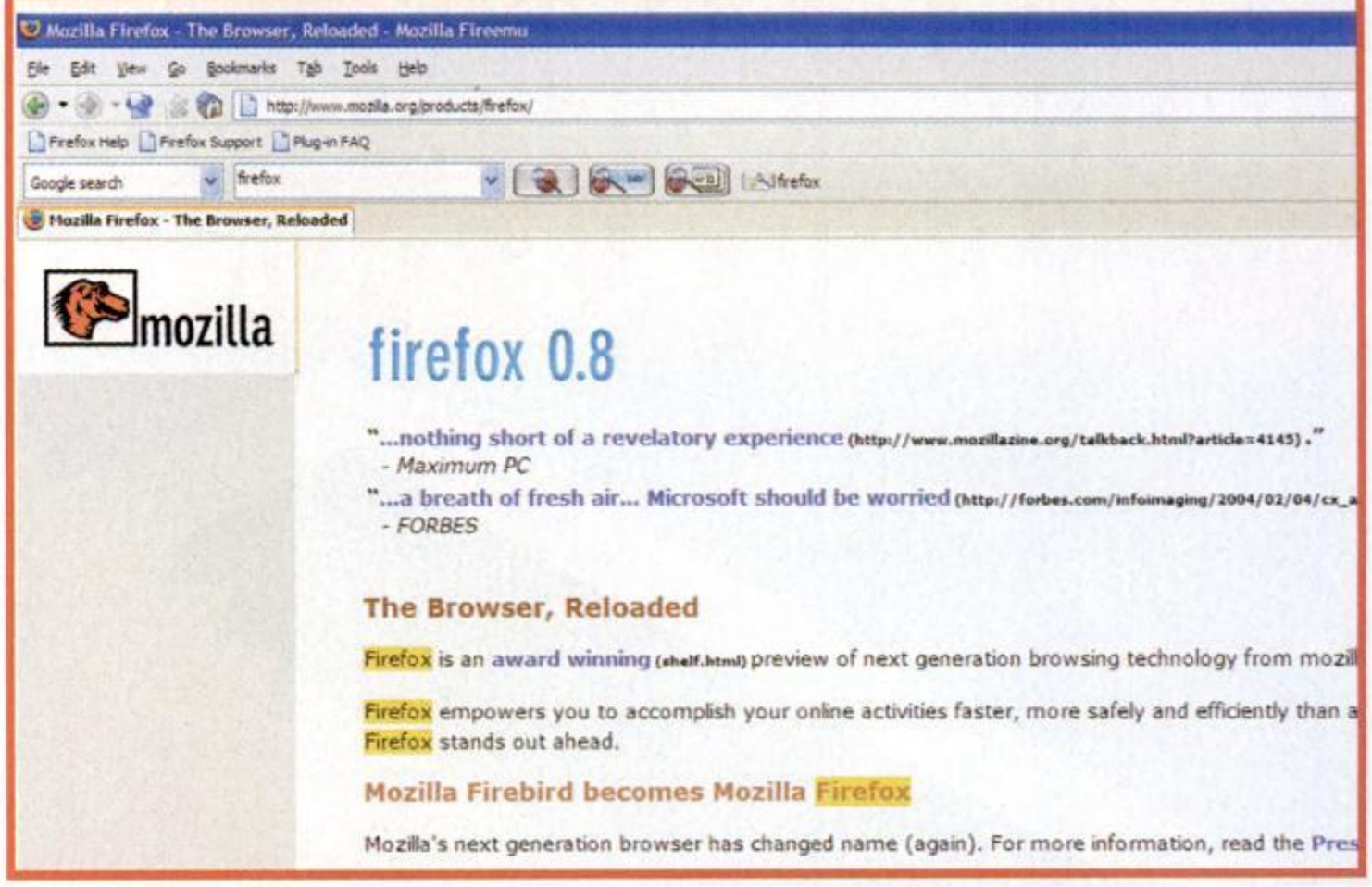
Customize your Amazon.com interface

Mozilla Amazon Browser is different from the dozens of Amazon tool bars spread across the web, mostly because it's not a toolbar. *MAB* is an applet that opens in a separate window and lets you search and browse Amazon's sizeable catalog of products in a snappy, kiosk-like interface.

Enter a term into *MAB's* search bar, and all matches on Amazon's site will pop up in moments. Click an item and, just like the online superstore's web site, you'll see product information, reviews, price, and sometimes even a photo. You can refine your searches by author, publisher, category, or even a specific Amazon.com storefront. *MAB* offers every bit as much search flexibility as Amazon.com's web site with a quicker, cleaner interface.

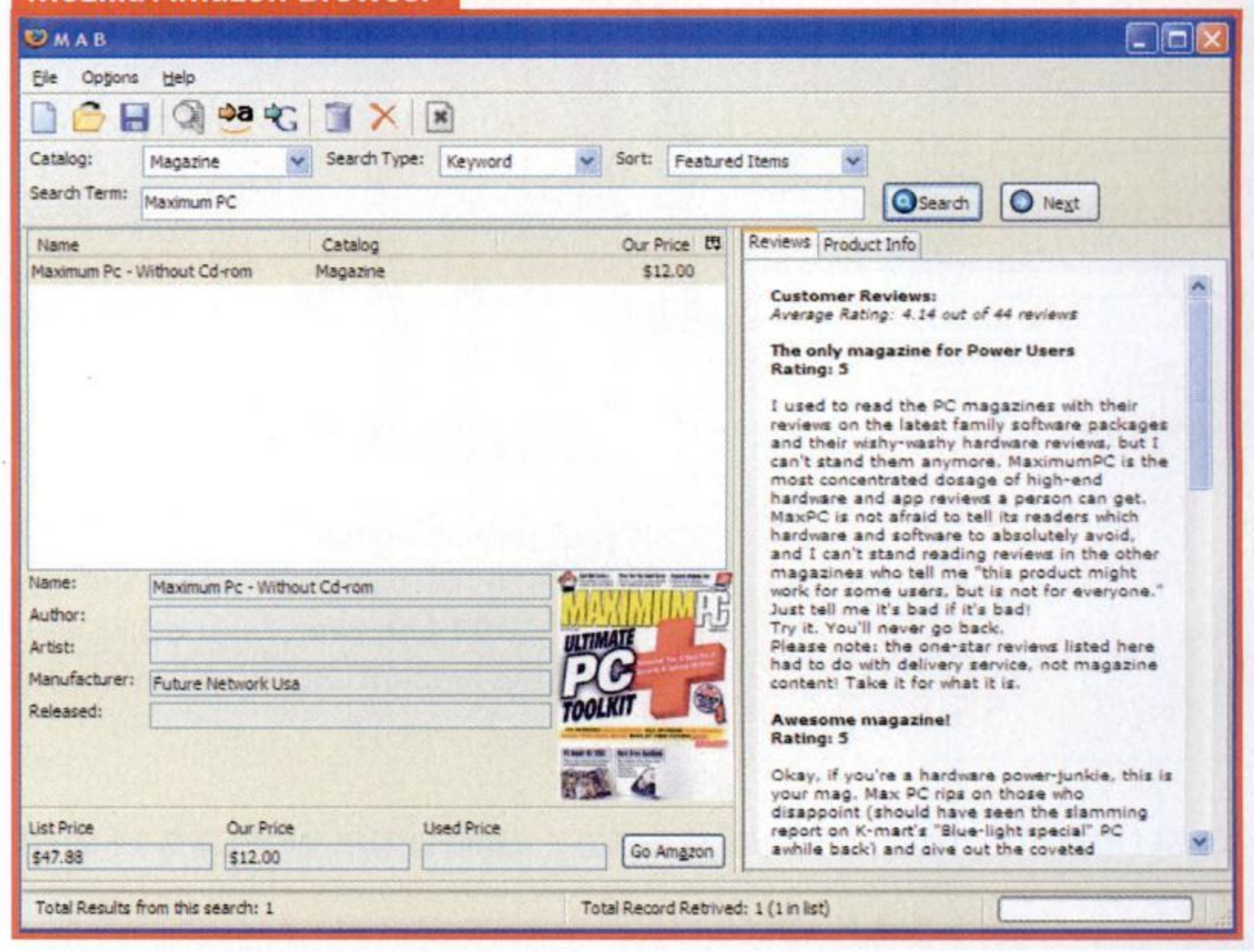
AUTHOR: FABIO SERRA

Needlesearch


Mozilla Firefox - The Browser, Reloaded - Mozilla Fireemu
File Edit View Go Bookmarks Tab Tools Help
http://www.mozilla.org/products/firefox/
Firefox Help Firefox Support Plug-in FAQ
Google search
firefox
Mozilla Firefox - The Browser, Reloaded
mozilla
firefox 0.8
"...nothing short of a revelatory experience (http://www.mozillazine.org/talkback.html?article=4145)."
- Maximum PC
"...a breath of fresh air... Microsoft should be worried (http://forbes.com/infoimaging/2004/02/04/cx_a
- FORBES
The Browser, Reloaded
Firefox is an award winning (shelf.html) preview of next generation browsing technology from mozil
Firefox empowers you to accomplish your online activities faster, more safely and efficiently than a
Firefox stands out ahead.
Mozilla Firebird becomes Mozilla Firefox
Mozilla's next generation browser has changed name (again). For more information, read the Pres

***NeedleSearch* can search anything, from web pages to PHP functions.**

Mozilla Amazon Browser


MAB
File Options Help
Catalog: Magazine
Search Type: Keyword
Sort: Featured Items
Search Term: Maximum PC
Search
Next
Name
Catalog
Our Price
Maximum Pc - Without Cd-rom
Magazine
$12.00
Reviews
Product Info
Customer Reviews:
Average Rating: 4.14 out of 44 reviews
The only magazine for Power Users
Rating: 5
I used to read the PC magazines with their reviews on the latest family software packages and their wishy-washy hardware reviews, but I can't stand them anymore. MaximumPC is the most concentrated dosage of high-end hardware and app reviews a person can get. MaxPC is not afraid to tell its readers which hardware and software to absolutely avoid, and I can't stand reading reviews in the other magazines who tell me "this product might work for some users, but is not for everyone." Just tell me it's bad if it's bad! Try it. You'll never go back. Please note: the one-star reviews listed here had to do with delivery service, not magazine content! Take it for what it is.
Awesome magazine!
Rating: 5
Okay, if you're a hardware power-junkie, this is your mag. Max PC rips on those who disappoint (should have seen the slamming report on K-mart's "Blue-light special" PC awhile back) and give out the coveted
Name: Maximum Pc - Without Cd-rom
Author:
Artist:
Manufacturer: Future Network Usa
Released:
MAXIMUM PC
ULTIMATE PC TOOLKIT
List Price $47.88
Our Price $12.00
Used Price
Go Amazon
Total Results from this search: 1
Total Record Retrived: 1 (1 in list)

***MAB's* nifty interface can make you feel like the world's most powerful bookstore clerk.**

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- Hosted on 1&1 Linux platform

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- 1&1 Chat - 1 channel
- 1&1 WebStatistics

SITE-BUILDING TOOLS
- WebsiteCreator for 12 pages
- Full version software worth $550
- FrontPage 2002 extensions
- CGI library

DOMAIN NAMES
- Includes 1 domain (.com .net .org only)
- Handling of unlimited domain names
- DNS Management
- Point 50 external domains to 1&1
- 5 subdomains

E-MAIL
- 50 POP3 e-mail accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 1 POP3 account

$9.99 PER MONTH

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BUSINESS PACKAGE

Sophisticated Business Solution

INCLUDES 3 DOMAINS

PACKAGE FEATURES
- 1,000 MB of Web space
- 5 FTP accounts
- 15,000 MB monthly transfer volume
- 1&1 Control Panel
- SSH Secure Shell Access
- SSI (Server side includes)
- SSL Secure Server
- Optional Dedicated SSL Certificate
- Hosted on 1&1 Linux platform

MARKETING TOOLS
- 1&1 Chat - 5 channels
- 1&1 WebStatistics
- In2site Live Dialogue
- 1&1 Newsletter Tool
- 1&1 WebElements

SITE-BUILDING TOOLS
- WebsiteCreator for 18 pages
- Full version software worth $550
- FrontPage 2002 extensions
- CGI library & Free CGI programming
- Perl, PHP3 and PHP4
- 1&1 WebDatabase
- 1x MySQL database (100MB)
- Cron Jobs

DOMAIN NAMES
- Includes 3 domains (.com .net .org only)
- Handling of unlimited domain names
- DNS Management
- Point 100 external domains to 1&1
- 50 subdomains

E-MAIL
- 150 POP3 e-mail accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 3 POP3 accounts

$19.99 PER MONTH

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DEVELOPER PACKAGE

Delivering Superior Performance

INCLUDES 5 DOMAINS

PACKAGE FEATURES
- 2,000 MB of Web space
- 25 FTP accounts
- 30,000 MB monthly transfer volume
- 1&1 Control Panel
- SSH Secure Shell Access
- SSI (Server side includes)
- SSL Secure Server
- Includes Dedicated SSL Certificate
- Server priority
- Hosted on 1&1 Linux platform

MARKETING TOOLS
- 1&1 Chat - 10 channels
- 1&1 WebStatistics
- In2site Live Dialogue
- 1&1 Newsletter Tool
- 1&1 WebElements

SITE-BUILDING TOOLS
- WebsiteCreator for 25 pages
- Full version software worth $550
- FrontPage 2002 extensions
- CGI library & Free CGI programming
- Perl, PHP3 and PHP4
- 1&1 WebDatabase
- 3x MySQL database (100MB)
- Cron Jobs
- Advanced Developer Tools

DOMAIN NAMES
- Includes 5 domains (.com .net .org only)
- Handling of unlimited domain names
- DNS Management
- Point 200 external domains to 1&1
- 200 subdomains

E-MAIL
- 300 POP3 e-mail accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 6 POP3 accounts

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BROWSER BOOSTERS

CHECKY

Check your web site's compatibility

There are a lot of web page standards out there: HTML, XHTML, CSS, RSS, BBQ, to name a few. Just because a page you designed looks good on *your* browser doesn't mean it'll look the same, or even work, on everyone else's web browsers.

Checky adds dozens of validation robots to *Firefox*'s context menu. With three clicks, you can see if your page passes W3C's HTML standards, or test the validity of your RSS feed. "Compliant" will be your web site's middle name after you've validated it with *Checky*.

AUTHOR: JOACHIM SCHREIBER

SPIDERZILLA

Download entire web sites to your hard drive

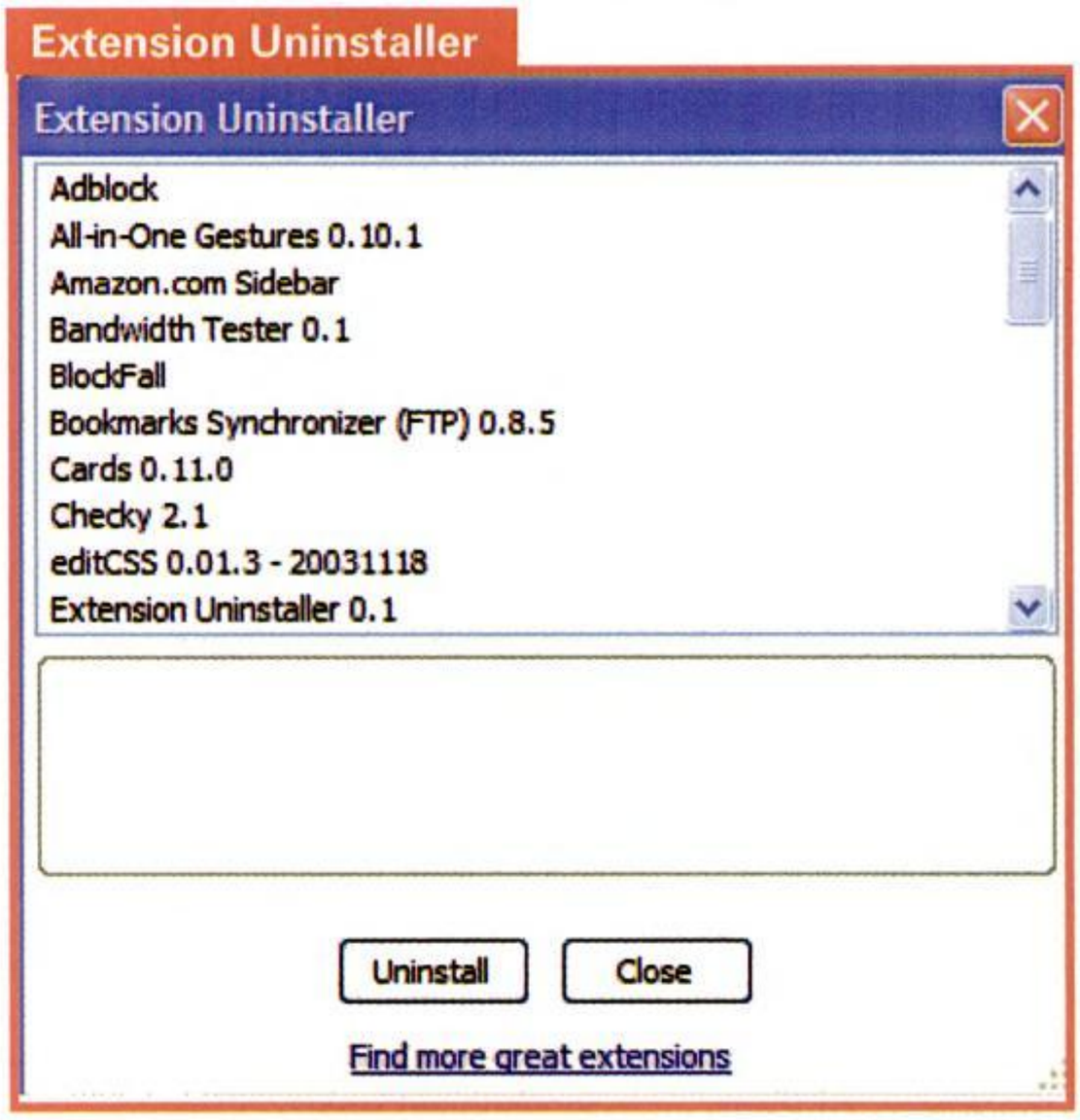
Spiderzilla is an extremely handy little extension for downloading and saving web sites. It uses an open source program called *Httrack Website Copier* to download entire web sites to your hard drive. All HTML, all pictures, all linked media and files on the site are saved to your computer for later examination. It's a great tool for archiving and preserving your favorite web sites. Our only hope is that future versions include a downloading progress bar.

AUTHOR: LENROCK

EXTENSION UNINSTALLER

Remove your extensions

Firefox's extensions system is unbelievably useful for web-goers, but it suffers from one major flaw: You can't uninstall extensions once they're loaded. Extensions can be removed manually, but it's a tricky procedure that involves fiddling with several files that are critical to *Firefox*'s overall well-being. *Firefox* is supposed to support extension removal in its next release, but until then we have to use an extension to remove extensions.



Jeremy Gillick's *Extension Uninstaller* helps v0.8 users remove unwanted extensions quickly and easily.

Extension Uninstaller automates the process of removing *Firefox* extensions, letting you uninstall them in a few clicks instead of several minutes of tense system file editing.

AUTHOR: JEREMY GILLICK

BLOCKFALL

Play Tetris and other games

Tetris is the sport of kings, gods, and everyone who's ever touched a computer. Alexey Pajintov's greatest work is now available as *BlockFall*, a minigame extension on *Firefox*. Whenever a page is slowly loading, just pop open a game of *BlockFall* and watch the hours blow by!

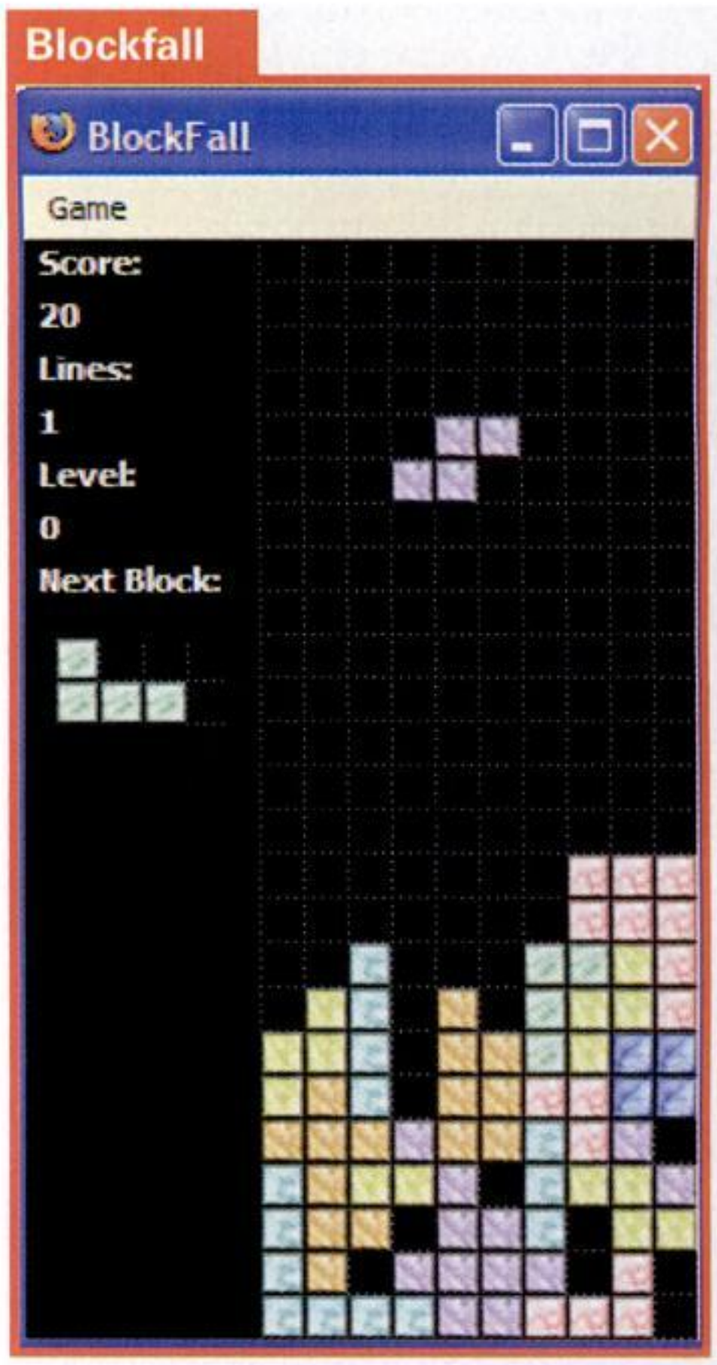
BlockFall and other *Firefox* extension games are interesting because they demonstrate the remarkable flexibility of this browser's extension system. Rather than using simple forms, scripts, and robots, *Firefox* extensions allow the development of full-fledged applets and games. Other *Firefox* games include *Minesweeper* and *Solitaire* clones, and a text adventure emulator called *Gnusto*.

AUTHOR: STEPHEN CLAVERING

BOOKMARKS SYNCHRONIZER

Take your bookmarks with you anywhere you go

This extension is essential for anyone who works on multiple computers. It works by uploading your bookmarks to an XML file, which is then uploaded to an FTP server of your choosing (your ISP usually grants you a few MB of space for free). Once this transaction has taken place, you can retrieve your bookmarks



***Firefox* extensions can even play games! Is a *Firefox Quake* port far off?**

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from any computer connected to the Net, and browse as if you were using that terminal for years. It's not the flashiest extension, but it's incredibly useful for anyone who uses different computers for work and play.

AUTHOR: TORISUGAR
VERSION 0.9 COMPATIBLE

THINGS THEY LEFT OUT

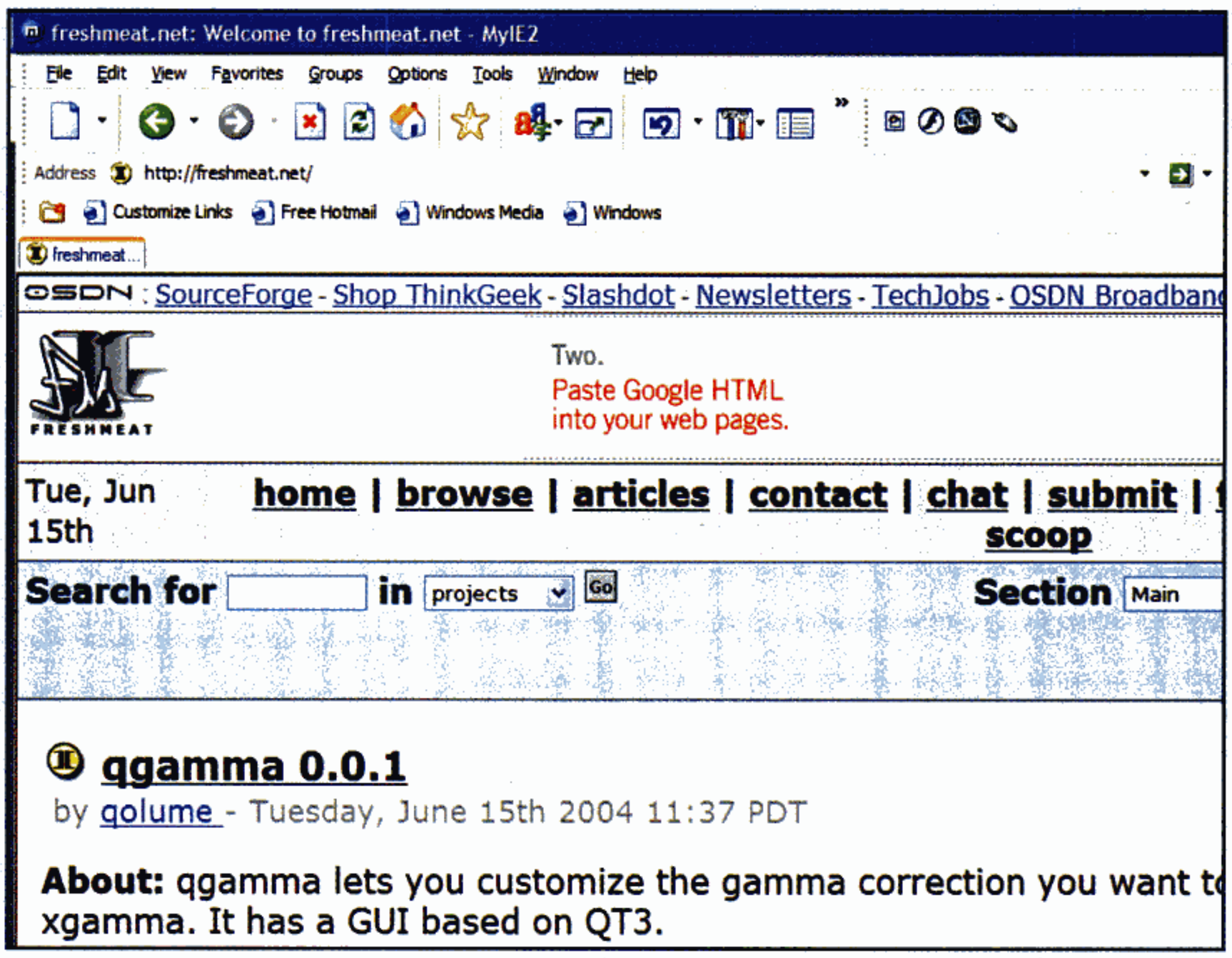
Take control of your browser

The only thing better than having a streamlined set of web-browsing options is having a multitude of web-browsing options. *Things They Left Out* adds just that to *Firefox*. All the little Advanced tab options you barely remember from *Internet Explorer* are back. This browser extension lets you manage certificates and MIME file types, debug web pages, and even tweak the mouse wheel's performance. It's the perfect add-on for those of us who feel compelled to control every single aspect of our web browsing experience, no matter how small or technical.
AUTHOR: !CDN ■

INTERNET EXPLORER-BASED ALTERNATIVES

Not ready to part with *IE* just yet? Here are two custom enhancements for Microsoft's more mainstream browser

Internet Explorer might not come with useful features like tabbed browsing and pop-up blockers, but that doesn't mean Microsoft's browser is a lost cause. Third-party titles like *MyIE2* and *AvantBrowser* take *Internet Explorer's* base web browsing technology and pump it up with new features and better performance. Here are two excellent alternatives for users who aren't ready to part with *IE* just yet.


freshmeat.net: Welcome to freshmeat.net - MyIE2
File Edit View Favorites Groups Options Tools Window Help
Address http://freshmeat.net/
Customize Links Free Hotmail Windows Media Windows
freshmeat...
OSDN : SourceForge - Shop ThinkGeek - Slashdot - Newsletters - TechJobs - OSDN Broadband
FRESHMEAT
Two.
Paste Google HTML into your web pages.
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home | browse | articles | contact | chat | submit | scoop
Search for in projects Go
Section Main
qgamma 0.0.1
by qolume - Tuesday, June 15th 2004 11:37 PDT
About: qgamma lets you customize the gamma correction you want t
xgamma. It has a GUI based on QT3.

MyIE2 is the IE-based Swiss Army knife for the web.

MyIE2

MyIE2 (**www.myie2.com**) enhances the plain-Jane *IE* web browser with luxuries Microsoft left out, and a few the company never thought of. *MyIE2* has most of *Firefox's* built-in features, like tabbed browsing, pop-up blocking, and skin support, as well as a ton of other functions.

A look at *MyIE2's* Tools menu will reveal a handful of useful commands. Tabs can be made to auto-refresh regularly. Pages can be translated between languages with both Babel Fish and Worldlingo. Paranoid browsers can even clear their history, cache, cookies, and form information with a few easy clicks.

AvantBrowser

Like *MyIE2*, *AvantBrowser* (**www.avantbrowser.com**) builds on *Internet Explorer's* foundation, and includes features like tabbed browsing, skin support, ad blocking, and mouse gestures. A basic e-mail client is also included in the browser, as are Google-based translation tools and a Yahoo!/Google search bar.

Speed and security are both given a boost with *AvantBrowser's* built-in media blocking. ActiveX controls, Java applets, scripts, and even pictures can be blocked from loading. Thanks to *AvantBrowser*, an *IE*-based web browser can finally be protected from spyware.

AvantBrowser isn't quite as robust or powerful as *MyIE2;* rather, it specializes in being quick, easy to use, and secure.

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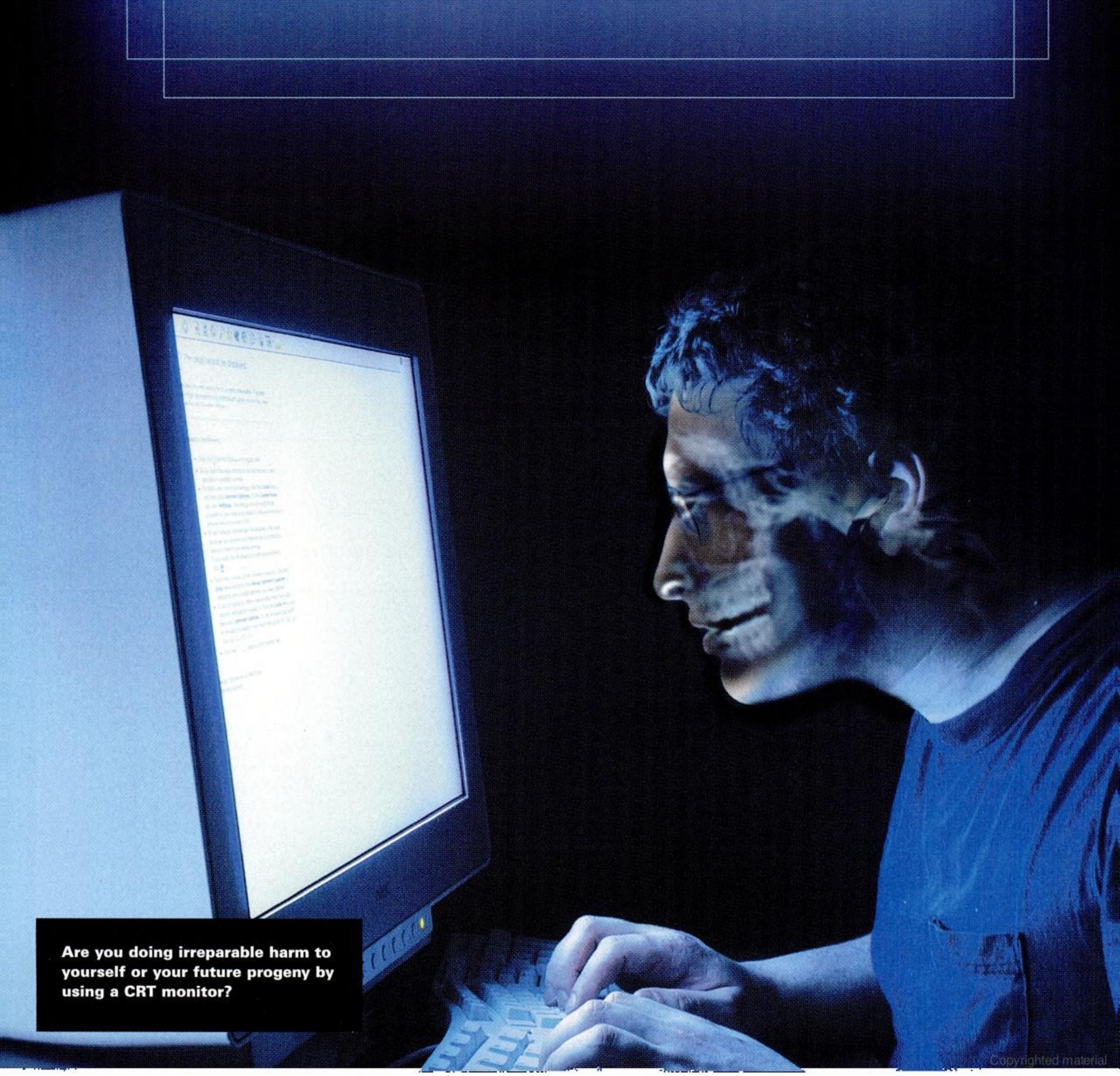
Believe It or Not: PC Urban Legends



Are you doing irreparable harm to yourself or your future progeny by using a CRT monitor?

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Do you know the difference between fact and fiction? Maximum PC investigates 11 common computing myths

Forget alligators in the sewers. The technical world is jam-packed with powerful and highly believable myths that have been besting wide-eyed techies since computers first roamed the earth. Some myths refuse to die no matter how nonsensical they've become. Some have only begun their journey of misinformation and bewilderment.

Skeptical? Inside these pages we'll explore tales of overclocking a Fat Table, and the joys of sending anonymous e-mail while downloading free songs that the RIAA cannot trace. Sound fishy yet?

In other words, if you haven't toned your technical-myth muscles, consider this quick workout your ticket to avoiding a few embarrassing moments down the line. And if we missed one, by all means send it to us for a follow-up at **input@maximumpc.com.**

BY ALICE HILL

CRTS EMIT HARMFUL RADIATION

Back when a color TV weighed as much as a motorcycle, homemakers warned their children to sit far from the set, lest they be exposed to excessive radiation. Was there something to their matronly warnings, and more chillingly, what can be said of the fact that today millions of us sit mere inches away from our computer monitors for hours and hours of every waking day?

Here's what we know for sure. Radiation is present in our environment in many forms, and all radiation is based on frequency and wavelengths. Frequency is the measurement of oscillations per second, while wavelength is the measurement of wave peak to wave peak, or rather, one is the measurement of how fast and the other is a measurement of how far between.

In a CRT monitor, a heated cathode tube shoots a stream of electrons at a screen coated with phosphorous material. The phosphor glows in relation to the electrons hitting it and produces the light of pixels seen on the front of the monitor screen. Deep inside the monitor X-rays are produced, but these are shielded by the picture tube and by the fact that electron energy is fairly limited in wavelength strength.

Basically, the amount of radiation inside a monitor is a tiny fraction of the radiation we receive throughout the day from other products and even our own bodies—the food we eat produces radioactive traces that stay in the body for days. The combustion of natural gas and other fossil fuels, and the radiation absorbed from masonry and other building materials is actually so much higher in magnitude than monitors that even using a CRT for eight hours daily puts you at much less risk relative to other factors.

So while you may hear talk about the dangers of having electronic devices such as cell phones or monitor screens in close proximity to your head, we have yet to see a study that definitively proves these devices are harmful. Now that ham sandwich you're eating is another story...

DEBUNKED! →

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ALLOWING YOUR BATTERIES TO DRAIN COMPLETELY BEFORE CHARGING THEM INCREASES THEIR LONGEVITY

Another myth that refuses to die comes straight from the far-off land of Nickel Cadmium. NiCad batteries had a nasty little flaw called the "memory effect." When these older rechargeable batteries weren't fully discharged between charge cycles, the battery "remembered" the shortened cycle, and thus its total capacity was reduced. If you ever bought a cordless Dust Buster and placed it back in the charger base a few seconds after sucking up a piece of lint, you quickly learned what memory effect was all about—even the most diligent dischargers quickly lost battery capacity.

Today, however, most batteries for advanced devices—like laptops and cell phones—are made with Lithium Ion, which has greater immunity to the memory effect besides being more powerful and lightweight. But Lithium Ion batteries aren't invincible; they can suffer from power leakage when not being used.

DEBUNKED!

LEAVING YOUR MONITOR ON 24/7 WASTES ENERGY

Technically speaking, leaving any powered device on consumes energy in some form. But monitors with the EPA's Energy Star certification offer a power-down feature that saves energy when your monitor stands idle for some time. A monitor set to conserve power can drop to 15 watts and then down to 8 watts depending on how long it is left undisturbed.

According to the EPA, if every U.S. monitor used the Energy Star power-down mode, the amount of energy conserved would translate to 11 billion kilowatt hours, or roughly $935 million per year saved. That's enough energy to power more than one million households for a year. Unfortunately, most monitors don't ship with power management turned on. You can learn more about this setting from the Energy Star's web site: **www.energystar.gov**, or take it a step further and get a flat panel LCD (with power management enabled, of course), which uses even less power than a CRT.

BELIEVE IT!

YOU CAN MAKE YOURSELF INVISIBLE TO THE RIAA ON FILE SHARING NETWORKS

A recent wave of RIAA crackdowns has caused panic among casual music downloaders, and driven hardcore file-sharing junkies to new anonymous file-sharing networks. But is it really possible to be safe from prying eyes? From what we can see, technology may solve some problems, but it's pretty much a safe bet that if the RIAA wants to track you down, they still can.

Three new attempts are underway to make file-sharing identities anonymous. **Blubster.com**, **EarthStation5.com**, and **Filetopia.com** networks use a variety of IP cloaking techniques, third-party proxies, and advanced encryption. But the effect is more like throwing obstacles in the way rather than actually creating a truly foolproof solution. It still doesn't prevent the RIAA from suing everyone on the network or getting the ISP to cough up the names.

According to Optisoft, creator of Blubster, its new network will offer two layers of camouflage. "Each user has multiple Internet protocol (IP) addresses to mask themselves," a spokeperson claimed. "Files in the network are disguised to look entirely generic to the outside observer. The multiple IP addresses are taken from other users on the network and distort individual activities."

The odds of getting caught certainly decrease when you move to a more cloaked solution and millions of people are involved, but in true technical terms, you can run but can't hide when it comes to anonymous file downloading.

Oh, and did we mention that downloading or sharing copyrighted songs you don't own is illegal?

DEBUNKED!

DEFRAGGING YOUR RAM IMPROVES PERFORMANCE

As the old saying goes, there's RAM and then there's RAM. OK, so we made this saying up. Our point is this: While it's true that defragging your hard drive can help with performance, defragging your memory is a sucker's game.

There are all sorts of white papers you can read on memory addressing holes, page file swapping, and so on, but we like this plain and simple explanation: Hard drive speed is measured in milliseconds, while memory is measured in nanoseconds—essentially a 6x difference in magnitude. If you defrag a hard drive and it saves you a second or two each time you access a file, you should notice the improvement. A memory defragging utility (which also uses precious system memory, by the way) might get you 1,000 nanoseconds extra, or *one millionth of a second*, which you will never notice.

DEBUNKED!

OVERCLOCKING YOUR PC CAN SHORTEN THE LIFE SPAN OF YOUR SYSTEM

This one is true, but only for the clueless. Overclocking is the task that separates alpha geeks from fumbling amateurs. For starters, incorrectly overclocking your system can not only fry the CPU and crash your hard drive, it can also heat the inside of your case to unheard of temperatures, and make everything from memory to add-in cards instantly lose their warranty protection. In other words, don't try calling Dell after you've melted your new Dimension.

The lure of overclocking stems from the fact that CPUs are not manufactured in predetermined clock speeds. The chips are simply tested and given a speed rating based on a theoretical assumption about how much performance each CPU is capable of delivering reliably. The key word here is "reliably." One man's reliable is another man's wasted horsepower. Overclockers are willing to roll the dice and gamble on the fact that if cooled properly and housed in the right motherboard, most CPUs can provide extra performance for basically no charge.

The downside is that increasing voltage and amping up the PCI and AGP buses on the motherboard can do all sorts of damage to the components in your system. Older Maxtor drives, for example, are known for being unable to run above a 33MHz PCI bus. For this reason, we recommend that overclockers do their research. We also understand that while blowing out a system sucks, the pursuit is noble.

BELIEVE IT!

INTERNET SPEED BOOSTERS INCREASE THE SPEED OF YOUR INTERNET CONNECTION

Once upon a time, modems doubled in speed every few years. This made Internet connections something you

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could feasibly upgrade. Today 56K is basically the end of the line. This means that unless you get some sort of high-speed access, your upgrading days are over. Or are they?

Internet speed boosters like AOL's Speedboost promise to make your dial-up experience faster than ever, but don't be fooled. The majority of speed boosting technology is really just smarter graphic and page handling. All this means is that the sites you visit often are preloaded and cached for faster delivery, and/or that graphics are downloaded in smaller sizes and lower resolutions. While this may feel speedier, you're technically only getting an optimized solution—not a faster connection.

For the AOL crowd not ready to take the high-speed connection plunge, we suppose an accelerator is better than nothing, but you're simply delaying the inevitable. As more and more sites serving broadband visitors add more and more graphics, the whole web will only get slower for modem diehards in the slow lane, no matter how many features these so-called accelerators strip out.

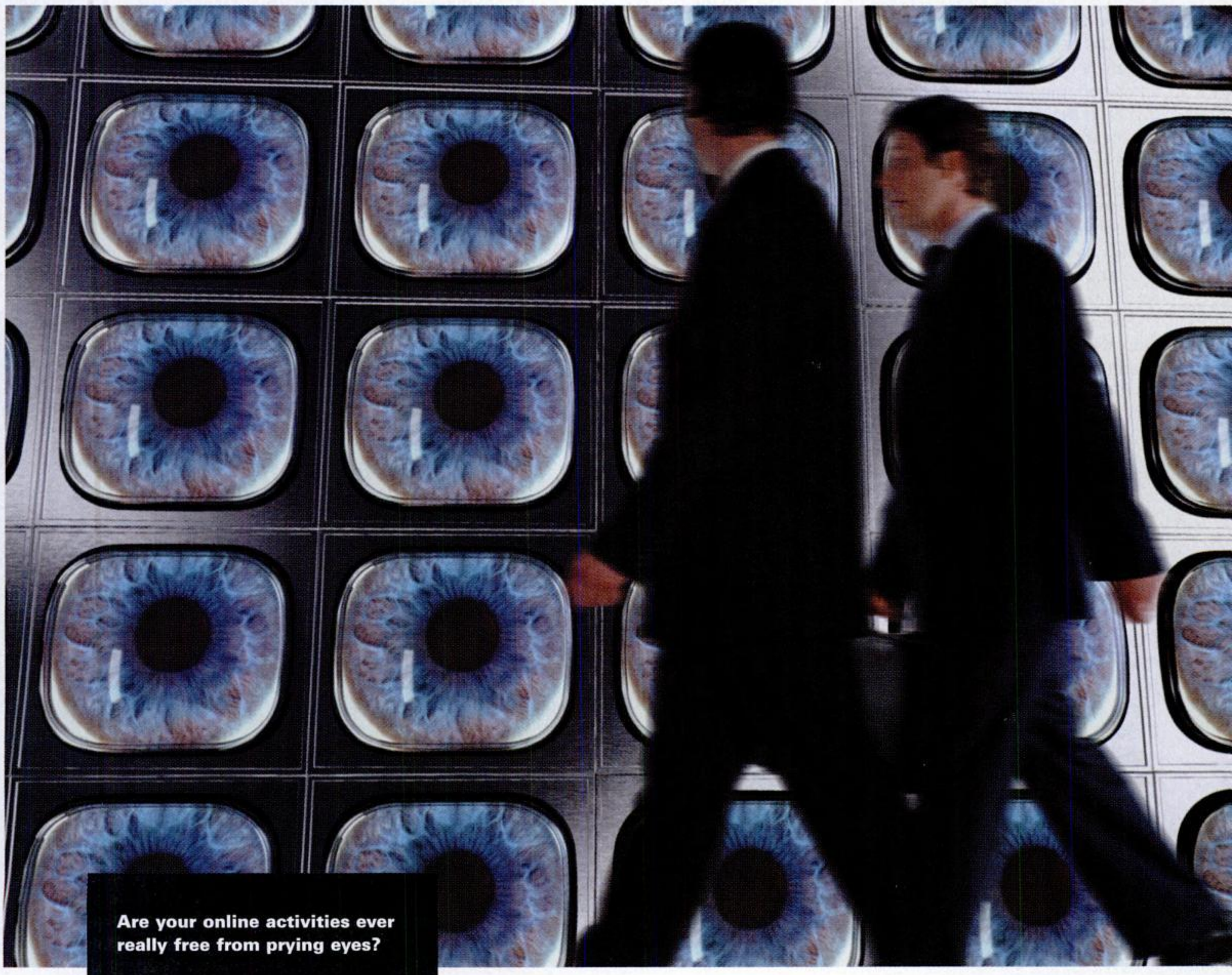
DEBUNKED!

IT'S POSSIBLE TO DIE FROM SITTING IN FRONT OF YOUR COMPUTER FOR TOO LONG

File this under "strange but true," because a 31-year-old gamer from western China literally perished in front of his PC this year after a particularly rousing 20-hour nonstop session of the online multiplayer game *Saga*. Internet café employees reported that the victim usually played for 10 hours a day nonstop. But it caught up with him. Doctors speculate that the actual cause of death was an embolism resulting from physical inactivity that moved into his heart.

While video game haters are quick to blame the medium, we have this to say: Doing anything for an abnormally long period of time without sleep or proper nutrition will probably do you in.

BELIEVE IT! →



Are your online activities ever really free from prying eyes?

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IT'S POSSIBLE TO SEND AN UNTRACEABLE E-MAIL

Let's rephrase this one to make the issue crystal clear. It's possible to send fake e-mail to a 90-year-old lady who uses AOL dial-up. It's *not* possible to send fake e-mail to an entity that knows anything about e-mail.

As one of our sources told us, "Totally anonymous e-mail is impossible—if it got from you to *there*, it could be traced back from *there* to you. There are measures you can take to make your e-mail effectively untraceable, (keyword: *wingates*) but as it involves breaking the law in at least three countries—no kidding—I think it would be unwise to detail them."

The most popular way to send *nearly* anonymous e-mail is to use a remailer that essentially forwards your message from a generic address. Even that method is prone to failure because the host of the remailing system is bound to turn you in if the Feds come snooping around. As the anonymous owner of **Anonymous.To**, one such remailing site, cautions, "Do not use remailers for illegal purposes. Sending death threats and harassing e-mail is extremely obnoxious and illegal. Most remailer operators will assist authorities in determining the correct name and e-mail address of users who abuse the system... as noted in Anonymous.To's Terms of Service."

Bottom line: If you need to hide, that's your business. If you need to break the law and do it via e-mail, that's nasty business that probably will come back to haunt you. Any questions?

DEBUNKED!

APPLE INVENTED THE GUI

There's a simple one word response to this one and that's: HOOEY. Technophiles know that the graphical user interface got its start at the legendary Xerox PARC (Palo Alto Research Center). In the 1970s, PARC was like a technology think tank on steroids. The smart men and women who worked there invented everything from Ethernet to the computer mouse to a user interface that could be maneuvered by clicking icons with a mouse. Unfortunately, Xerox was the ultimate loser because it never really did anything with all the smart inventions it was financing. As the legend goes, Steve Jobs visited PARC and became determined to use what he saw there for his own computer design, which kick-started the graphical OS frenzy that Apple is known for today.

A lesser-known twist to this story involves the creator of the Apple OS, Jef Raskin. Raskin claimed that while the PARC guys were heading in the right direction, he was already onto the whole graphical thing and actually came up with other enhancements that made his GUI better than what PARC had cooked up. As he put it: "Click-and-drag methods were invented at Apple and not at PARC (or elsewhere, as far as I know). I created this method for moving objects and making selections after finding the Xerox click-move-click method prone to error. Bill Atkinson extended the paradigm to pull-down menus. This all happened relatively early in the history of the Mac. The way my insight got extended by [Atkinson] was typical of how things developed then."

Bottom line: PARC was first (sorry, Jef), but Apple was better at innovating over time, which reminds us of another OS story that started with a little program called QDOS....

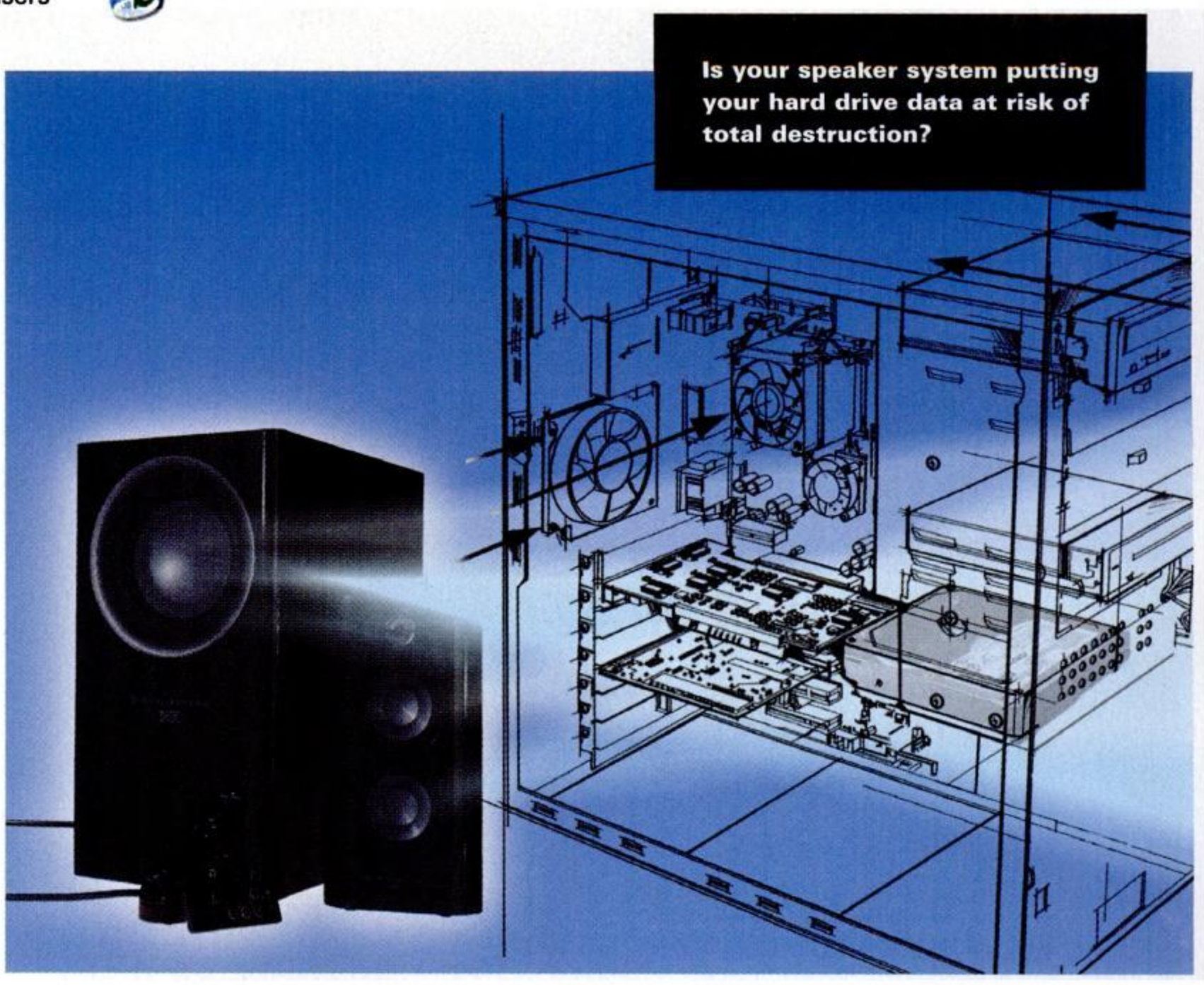
DEBUNKED!

PLACING SPEAKERS NEAR YOUR HARD DRIVE WILL ERASE ALL OF YOUR DATA

With virtually every office desktop and home computer happily using some sort of speaker system in close proximity to hard drives and sensitive monitor screens, it's surprising that anyone is still worried about this one. But myths often have a life of their own. That's why we're here to tell you once and for all that it would take a stack of incredibly powerful magnets to do a number on your hard drive.

Here's why: Hard drives are magnetic devices, meaning the platters are manufactured with a small layer of magnetic coating. The key word here is *coercivity*. In other words, the magnetic field of a device like a speaker coil must be strong enough to reduce the magnetic field of a device like a hard drive to do any damage. Or in more practical terms, an unshielded speaker has a magnetic field length of about 1,000 Gauss. Sounds large, but even a stack of 10,000 Gauss rare earth magnets atop your hard drive would be incapable of causing coercivity.

DEBUNKED! ■



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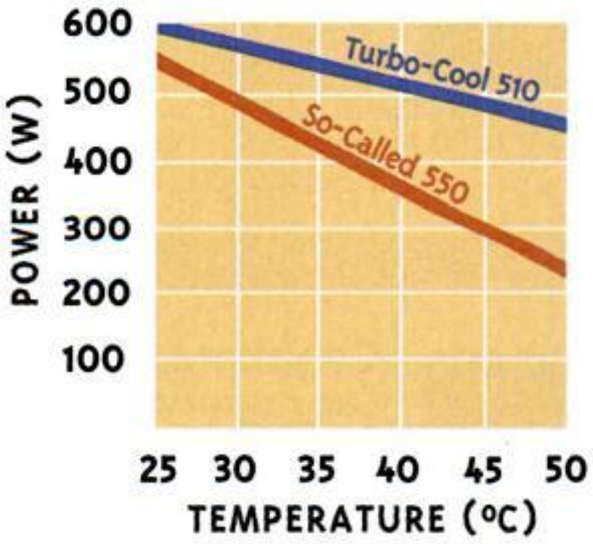

*Even though the ambient temp. in a power supply is at least 40°C (104°F), most manufacturers unrealistically assume 25°C (77°F) in order to exaggerate their wattage claims. Since the proper full-load rating is 15°C higher, these power supplies produce **33% less power than their advertised ratings** as shown on the derating chart.*

Turbo-Cool 510 derating spec: *full load @ 40°C, decrease to 90% load @ 50°C.*
So-Called 550 manufacturer's spec: *full load @ 25°C, decrease to no load @ 70°C.*

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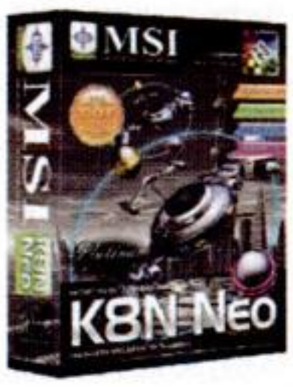

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Ask the Doctor

Symptom ▶ Diagnosis ▶ Cure

RESOURCE HOG

My computer started acting extremely sluggish recently, and when I checked the Task Manager, I noticed that a process named vdrrib.exe was using 100 percent of the system resources! I don't know what this program is or where it came from and I have no recollection of installing a program that might be related to it. I've tried to uninstall it but can't locate it on my system. *Spybot Search & Destroy* and *Ad-Aware* are both unable to detect it. I also have a fully updated copy of Trend Micro's *PC-Cillen 2003*, which fails to detect the app. *McAfee Stinger* and *Virus Checker*, which I ran using a DOS disk, also don't discover anything. Can you please help shed some light on the situation?

—MIKE DELISA

Well, we've never heard of vdrrib.exe before, and neither have the folks at Symantec's online antivirus center, or any of the spyware sites we checked. We also did a quick Google search on the executable's name, and came up with nothing. That leads us to believe it's probably an ill-behaved app, not an actively malicious one.

Now it's time to play PC sleuth. First, let's find out where the file lives. Go to Start, then Search, and scan all your drives for vdrrib.exe. It will probably be buried in your Program Files directory or your Windows directory. If it's in Program Files, the directory it's stored in will probably be a great big clue about the origins of the program. If it's in your Windows directory, you'll probably have to dig a little deeper.

Right-click the file name, then go to Properties. Click the Version tab and explore the contents of the box labeled "Item name." Often the proper name of the application and the company that authored it will appear in one of those fields. You can use that information and Google to track down the file's origin.

If all that fails, you should probably just stop the application from loading automatically. After all, if no one on the Internet has written about it, it can't be vital for stable Windows operation. Note: if your PC is connected to some sort of specialty hardware, like a drum scanner or an electron microscope, you shouldn't disable the app outright.

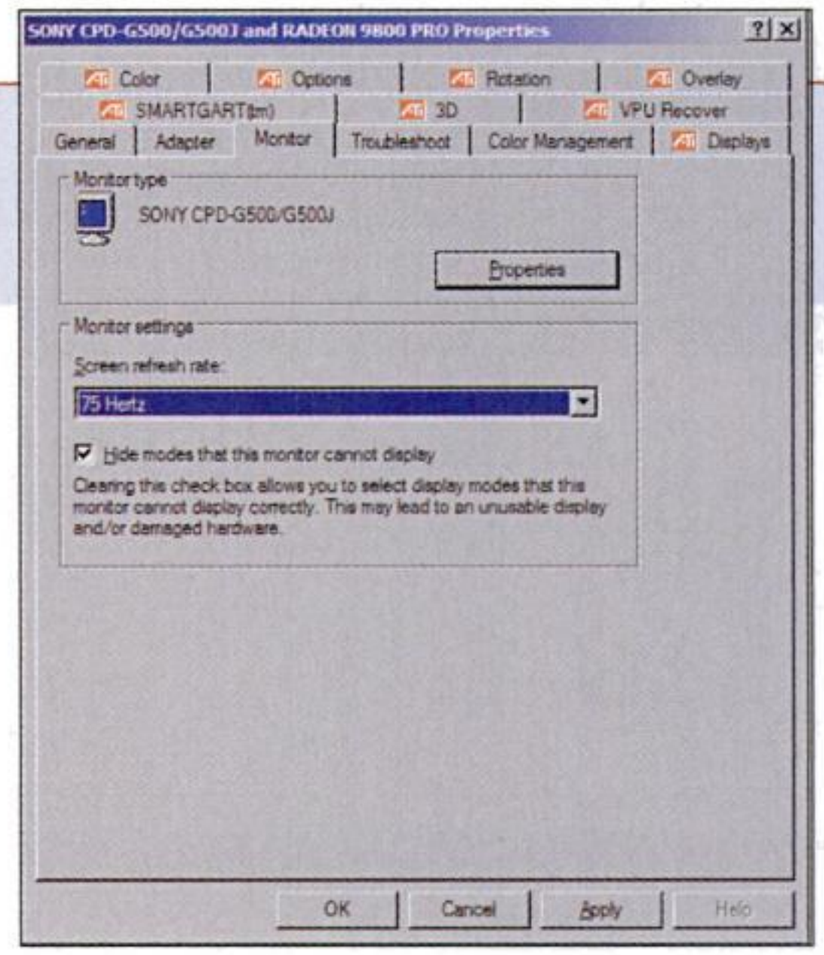
To stop the app from automatically loading, go to Start, then Run, and type `msconfig`. Then go to the Startup tab and look for vdrrib.exe or any variation thereof. Uncheck the box next to it and restart your computer. That should take care of the problem.

RESETTING REFRESH RATES

Every time I shut down my system, the monitor's refresh rate gets reset to 60Hz, forcing me to reset it to 75Hz. I have a Sapphire Radeon 9600 videocard with 128MB of memory and I'm running Windows XP Pro with the latest ATI Catalyst drivers installed. I also have a GeForce3 Ti 300 videocard, but I haven't experienced this problem with that card. What could be causing my refresh rates to reset?

Also, is it better to run your monitor at a high refresh rate such as 85Hz or is it better to run it at a low refresh rate such as 60Hz? And do higher refresh rates put extra strain on you monitor?

—BRYAN L.



Setting your monitor's refresh rate can be tricky. Set it too high and your image quality will suffer, but set it too low and you'll suffer flicker-induced headaches.

This is a problem the Doctor's never seen before and couldn't replicate in the Lab. Our best guess is that the culprit isn't your videocard driver, but your monitor driver. To be sure, however, you should first completely remove your old videocard drivers, reboot your PC, then reinstall your videocard drivers. (ATI has a handy utility that will remove all traces of old drivers at www.ati.com/support/drivers/misc/catalystutils.html.) Only then should you go to your monitor manufacturer's web site and download the latest version of your monitor drivers.

Another possible culprit could be a videocard configuration utility—such as Powerstrip. It might automatically change your refresh rate every time you restart your computer.

The optimum refresh rate varies among individual users and monitors. As a rule of thumb, we recommend you test each refresh rate your monitor supports, then use the lowest setting that doesn't produce noticeable flicker. Higher settings will decrease the lifespan of your monitor, and can produce blurry onscreen images.

To adjust your refresh rate, right-click your Desktop, go to Properties, then go to the Settings tab and press the Advanced button. Click the Monitor tab and adjust your refresh rate using the drop-down dialog.

To test for flicker, stare at a point about a foot right or left of your monitor. This should put the display in your peripheral vision. The human eye is much more sensitive to flicker in the peripheral vision than when you are staring directly at a monitor. We usually find that a setting between 70Hz and 80Hz is sufficient to minimize flicker without decreasing image quality.

PROPER PREFLIGHT PROCEDURES

I've built three computers over the last couple of years and they've all run properly right off the bat, but they don't do what I really want them to: kick ass in *Microsoft Flight Simulator 2004*. I'm not sure if I'm buying the wrong parts or what, but my current box has an AMD 1.2GHz processor with a gig of RAM, a Western Digital 120GB hard drive, and an nVidia GeForce 5200 256MB videocard with the most current drivers. Unfortunately, *Flight Simulator* still jerks along at an agonizingly slow frame rate unless I turn the detail levels way down. This is very annoying when attempting to land a helicopter on a moving ship and such.

So, my question is, when acquiring the hardware for my next system, what should I purchase to run flight sims at their max resolution and detail levels?

—KEVIN R. THORNTON

You've got two problems. First, *Microsoft Flight Sim* is a notoriously hardware-hungry application. It will use every ounce of computing power your system has to offer. Second, the computer you describe in your letter is suffering from an advanced case of slow-pokiness. Your old 1.2GHz pro-

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cessor and GeForce 5200 simply don't have the legs for a modern flight sim. While your system is well within the minimum system requirements for *Flight Simulator 2004*, it just won't work with all the details turned up.

If you want a system that can run *Flight Sim* with the features turned up to a reasonable clip, we recommend at least a 2.5GHz processor and a Radeon 9600 XT or GeForce 5700 Ultra.

AND HERE'S A SIMPLE ANSWER

Here's a simple question: Will the Asus K8V SE Deluxe motherboard allow you to boot from a SATA drive?

—RICHARD STAUFFER

The simple answer is yes. The complex answer depends on what you mean. Can you boot from a SATA drive connected to the computer? Yes. Can you boot from the motherboard without using a floppy and hitting F6 to install other drivers in Windows XP? No. (At least not the last time the Doc tried it on a board equipped with the same south bridge as the K8V SE Deluxe.)

RUBBING YOUR CPU THE WRONG WAY

I recently cleaned off my CPU and heatsink but I mistakenly used rubbing alcohol from the medicine cabinet rather than pure isopropyl alcohol. My system is now experiencing random freezes and pauses. Did I damage my CPU and heatsink? I read in a recent issue of *Maximum PC* that rubbing alcohol has some oil in it that may cause problems. What kind of damage could I have done to my CPU?

—GREG G.

While it's always best to use pure isopropyl alcohol, the Doctor has never injured or destroyed a CPU by cleaning it with the cheap stuff. But it's quite likely your PC was aversely affected by the recent cleaning in another way. Did you wrench on the machine in the process? Did you remember to use thermal paste when you reapplied the heatsink? Is the heatsink flush with the processor? Did you do anything else to the machine between cleaning the CPU, or did you simply remove the heatsink, clean the CPU, and put the heatsink back on? Any of these questions could lead to the answer.

STRETCHING YOUR MOTHERBOARD

I have a system with an Epox EP-8K3A+ motherboard and an Athlon XP 2000+ processor. This board has been great for overclocking and just plain tweaking. I recently read that the adjustability of the motherboard's BIOS makes it capable of running later 333 FSB Athlon chips. Is this true? Will the board run a Barton CPU with the larger L2 cache? I was looking to get a 3000+ Barton processor 333FSB and a new videocard and making my system last for another year or two.

—CLAIR W. SMART

The one caveat with overclocking (even with the most overclocking-friendly CPUs, motherboards, and RAM) is that it may not work. Sure, it's worked for the 20 guys who've posted on 3doverclockerzhardwarevideocards.com, but is it going to work for you? If you're willing to gamble the $125 price of a new CPU to give it a whirl, there's a good chance you'll succeed. After all, the board has an established reputation for reaching 333MHz frontside bus speeds. Just remember there's always a chance it won't work. In which case, you may have to shell out another C-note for a current-generation VIA or nForce2-based motherboard to get the best performance from the CPU.

THIS SPACE IS RESERVED

Every time I defrag my hard drive with *Diskeeper 8.0*, I see green/white areas labeled Reserved System. What is this space on a hard drive for? Can it still be used for storage? If not, is there any way I could reclaim the space for storage?

—IVAN ROSENBREYER

Reserved System is primarily made up of System Restore points and/or files located in the Recycle Bin. By default, Windows allocates a significant percent of your drive's capacity to these functions. If you want to reduce the amount of space used by System Restore, right-click My Computer, select Properties, then click the System Restore tab. Click the drive in question and adjust the slider to reflect the amount of drive space you want dedicated to this process. To change the amount of space the Recycle Bin reserves, right-click the Bin on the desktop, go to Properties, and adjust the slider to your liking.

CAPTAIN COMMANDO

OK, I'm a bit of a clumsy case commando and while fumbling around with my system, I managed to totally snap off the SATA connector on my Western Digital WD740GD 10K SATA drive. Because this drive costs much more than I typically part with for a hard drive, I would prefer to repair it rather than replace it, especially since the circuit board hard wired to the SATA plug can be easily removed. If I could obtain the part, I could easily replace that particular portion of the hard drive but I'm having trouble locating a replacement part. Also, Western Digital says the card is firmware specific and therefore a replacement part wouldn't work. So what's the prognosis, Doc? Is fixing my drive truly impossible?

—JONATHAN PONDER

Yours is a lesson that should be noted by all. You must always treat hard drives with the utmost care and respect! They are very fragile devices, as you have discovered, and once something goes wrong, you're typically up a creek without a paddle.

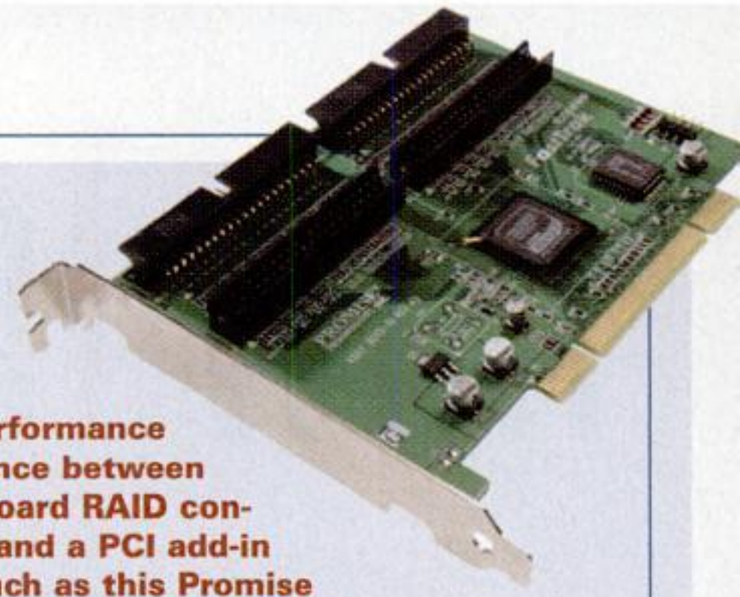
We contacted Western Digital regarding your problem, and the first person the Doc talked to was skeptical that the company would sell individual parts to customers who had broken their drives. As of press time, we had still not received a definitive answer, but we don't recommend that you hold out hope.

Our advice: Say three "Hail Marys," write "I will be more careful with my hard drive" on the chalkboard 100 times, and then go buy a new drive. ■

WHICH IS THE BETTER RAID CONTROLLER?

Which is better: an onboard RAID controller or a PCI-based RAID controller card? My system scored 73MB/s in *SiSoft Sandra's* benchmark with two Western Digital 36GB 10,000rpm Raptors hard drives running off the onboard motherboard RAID controller. Will I see a performance gain if I switch to an add-in RAID controller card?

—DILSHAN



The performance difference between an onboard RAID controller and a PCI add-in card such as this Promise FastTrack unit is negligible, unless your PCI bus is a limitation.

Absolutely not! Your RAID controller can pump data only as fast as the bus it's riding, and as a general rule onboard controllers have faster connections than the PCI bus provides. An onboard RAID chip runs at whatever speed the south bridge can communicate with the CPU, which varies among chipsets but still always exceeds the PCI bus' 133MB/s maximum.

This means a PCI add-in card can actually be slower than an onboard solution if you're saturating the PCI bus with traffic. Of course, this is only a concern if the other PCI cards on the bus are themselves speed demons—such as Gigabit Ethernet or additional RAID arrays. Otherwise, you won't see a significant speed difference between an onboard RAID controller and a PCI device.

Expect that to change with the upcoming advent of the PCI Express 1x slot, which will chug along at a whopping 500MB/s—a welcome development, for sure.

If there's something strange
under your PC's hood,
Who ya gonna call?
The Doctor!
E-mail the Doc at **doctor@maximumpc.com**

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How To...

A step-by-step guide to tweaking your PC experience

SUPERCHARGE Windows XP

41 tips, tricks, and top-secret web sites that will turn even a puny PC into a powerhouse

BY WILL SMITH

10 THINGS TO DO TO YOUR BRAND-NEW PC

1. Get your Internet connection up and running. Without net access, your PC is damn near worthless!
2. Install the latest drivers for your motherboard's chipset. They'll be at your mobo manufacturer's web site. Many system crashes can be traced directly to either old chipset drivers or evil, evil gnomes.
3. Download and install the latest drivers for your videocard and soundcard. They'll work with the chipset drivers to have your PC performing at its peak potential.
4. Install Windows XP Service Pack 2 and all the updates from **Windowsupdate.com.** Don't ask questions, just do it.
5. Restore your precious data to your new machine.
6. Install and tweak all those apps you use every day. Install *Winzip*, an MP3 player, a word processor, your e-mail app, and Mozilla *Firebird*.
7. Activate Windows, register all your apps—or click the "Never bother me again" button—and make a backup image of your minty-fresh system.
8. Install your favorite benchmark app and take your PC for a test spin.
9. Burning in your PC will help ferret out faulty components and give you a pretty good idea of your system's stability. We like *SiSoft Sandra's* burn-in utility. Download the free version at **Sisoftware.net.**
10. Open a tasty beverage, fire up your favorite game, and let the frags roll in. Your PC is ready to rumble!

10 EASY WAYS TO TOUCH UP WINDOWS XP

1 CLEAN OUT YOUR SYSTEM TRAY: Every unnecessary app running on your PC saps precious CPU cycles and memory.

2 UPDATE YOUR DRIVERS: New videocard and chipset drivers can help you reap performance dividends.

3 ENABLE DMA FOR YOUR DRIVES: Go to the Device Manager and take a look at the properties of your Primary IDE Channel. On the Advanced Settings tab, make sure that DMA, if available, is checked for both devices. Rinse and repeat for the Secondary IDE Channel

4 VISIT WINDOWSUPDATE.COM REGULARLY: Patches don't just protect your PC, they also improve performance.

5 CONVERT YOUR DRIVES TO NTFS: Get the most from your drives by converting them to NTFS. Open a command line, and type `convert x: /fs:ntfs`, but replace x with your drive letter. Back up your important files first!

6 USE QUICK LAUNCH: Instead of cluttering your Desktop with loads of shortcuts, right-click the Taskbar, go to Toolbars, and make sure Quick Launch is checked. Then drag your favorite shortcuts to the Quick Launch bar for easy access, anytime.

7 SPEED UP YOUR UI: Bells and whistles are great, but faster is better. Go to the Display control panel, click the Appearance tab, and hit the Effects button. Uncheck the first two options, as well as "Show shadows under menus."

8 ONE CLICK TO DEVICE MANAGER: To open Device Manager in Windows XP without the hassle of going to System Properties, just create a shortcut to devmgmt.msc.

9 FIRE UP THE ONSCREEN KEYBOARD: If you need to type something and your keyboard's not available, Open My Computer and browse to C:\Windows\System32 and double-click osk.exe. You can use the onscreen keyboard by pointing and clicking at individual characters.

10 DEFRAG: Regular defragmentation can improve your machine's hard drive performance by massive amounts. To start Defrag, right-click your hard drive in My Computer, select Properties, go to the Tools tab, and then click Defrag.

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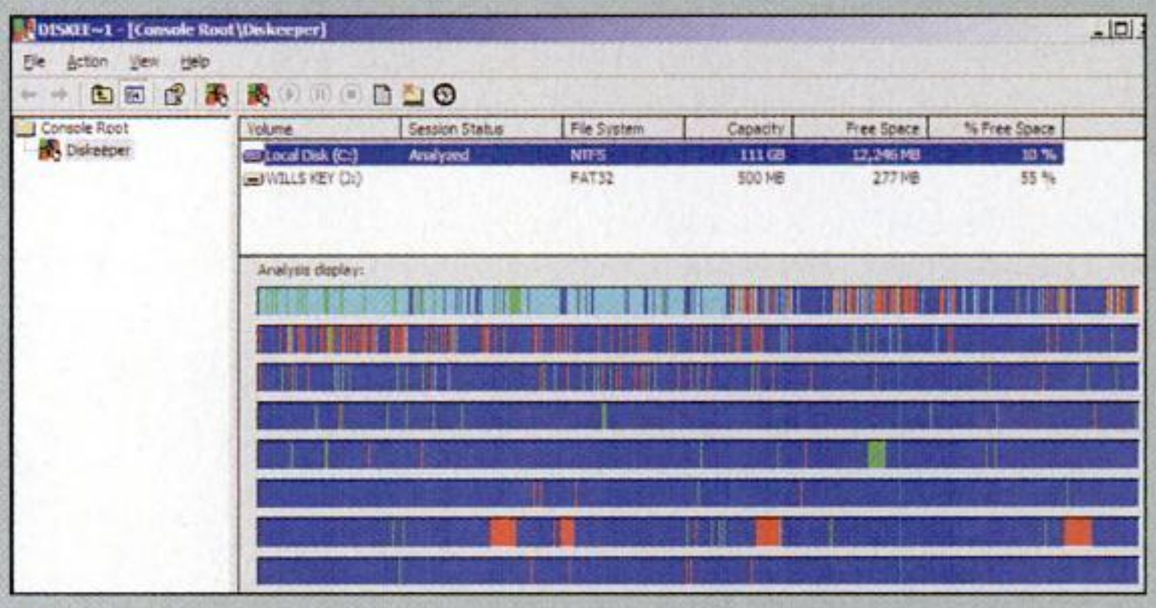
5 SOFTWARE TOOLS EVERY PC SHOULD HAVE

COMPRESSION UTILITIES:
Winzip is the best utility around for managing pesky zip files. You don't have to settle for the puny Compressed Files tool built into XP anymore! Get it at **winzip.com**.

ANTIVIRUS:
In today's dog-eat-dog Internet world, you must have antivirus software. We recommend *Norton AntiVirus 2004* (**www.norton.com**). It's easy to use and provides excellent protection.

FIREWALL:
Running a PC without a firewall is like using a blood-based sunscreen in shark infested waters. We recommend *Zone Alarm* (**www.zonelabs.com**).

BROWSER:
Only schmucks are still using *Internet Explorer.* Download Mozilla *Firefox 0.8* (**www.mozilla.org**) and browse with the power users. See our feature on page 34.



One of the best ways to keep your PC purring along at peak performance is to frequently defragment your drive. You can even set *Diskeeper* (shown here) to run automatically!

DEFRAG:
The hard drive defragging utility built into Windows XP is acceptable for your grandmother, but if you want to keep your disks in tip-top shape, you need a more powerful tool. Get *Diskeeper* from **www.executivesoftware.com.**

5 TOP-SECRET REGISTRY HACKS

Adding new functionality to Windows is as easy as opening regedit.exe and making some minor changes. *Changes here can break Windows, so make sure to back up your system before you touch anything!*

1. MINIMIZE OUTLOOK TO THE SYSTEM TRAY: Browse to HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Outlook\Preferences. Add a new DWORD value named MinToTray, and set it to 1. Next time you restart *Outlook*, it will minimize to the System Tray!

2. MAKE PASSWORD PROTECTED SCREENSAVERS LESS ANNOYING: You enable a password protected screensaver to help keep meddlers out of your machine, but you're annoyed when the screensaver starts and you're locked out. The solution: Add a grace period. If the screensaver activates, but you move the mouse during the grace period, you can get right back to work, without typing your password again. Browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon and modify ScreenSaverGracePeriod. The value is stored in seconds. We like to set the value somewhere between 5 and 30 seconds.

3. SECURE YOUR PAGEFILE: The pagefile can contain anything that might be in RAM, including sensitive data like passwords. To set XP to automatically erase any info contained in it, go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management and add a DWORD value named ClearPageFileAtShutdown. Set it to 1, reboot your PC, and your machine will automatically erase the contents of your pagefile when you shut down. Be aware that this will make your PC take longer to shut down.

4. REMOVE THE ANNOYING COMPRESSION OPTIONS FROM THE DISK CLEANUP WIZARD: The Disk Cleanup wizard is a handy way to find out what unused files you can get rid of, but it also calculates the space you'll save by compressing your drive. We don't like to use compression, so we're going to disable it by browsing to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\VolumeCaches\Compress old files. Clear the value from the Default key. The next time you start Disk Cleanup, it will skip the compression analysis.

5. CUSTOMIZE THE FOLDERS LISTED IN YOUR OPEN DIALOG BOXES: Whenever you open a file in *Notepad* or *Paint*, there's a default list of folders on the left side of the Window. Unfortunately, those folders are just not that useful for most people. To customize them, point Regedit to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\comdlg32 and create a new key called Placesbar. Inside that new key, create a String called Place0 and point it to the folder you want to appear on the open dialog, say, C:\CurrentWork. Create another String called Place1 and point it to another location on your drive. You can use variables (%USERPROFILE% will point the folder to the profile of a currently logged-in user) or URL's, so you can even use network shares. This hack won't change the same dialogs in *Office*, but if you have *Office XP*, you can add new folders to the Placesbar by going to File, Open, and browsing to the folder you want to add. Once you have it selected, go to Tools and click "Add to My Places."

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11 WEB SITES THAT EVERY GEEK SHOULD BOOKMARK

1 **GOOGLE.COM:** It's the only web site we know of that's used as both a noun and a verb. Learn to make Google work for you, and you'll never regret it.

2 **WINDOWSUPDATE.COM:** Update Windows regularly! It's good for you, it's good for your friends, and it's good for those tiny baby seals that live down by the sea. Really.

3 **ARSTECHNICA.COM:** Hardware- and software-agnostic computing news is only a bookmark away. Ars Technica has something for computer geeks of every persuasion.

4 **SLASHDOT.ORG:** "News for Nerds. Stuff that Matters." Slashdot's tag line says it all.

5 **SHACKNEWS.COM:** If it's gaming, Shacknews covers it. Get all the latest news about games here.

6 **THEINQUIRER.NET:** More than 90 percent of computer-related news on the net originates here. OK, we made that up, but The Inquirer is always five minutes ahead of the rest of the web.

7 **PENNY-ARCADE.COM:** Every once in a while we all need a laugh. The wacky-asses at Penny Arcade will provide just that, if you read the column too!

8 **GIZMODO.COM:** If you ever wondered where that gadget-savvy pal finds out about all his wonderful toys, it's probably Gizmodo. Get the latest on PDAs, wireless tech, and just-plain-cool stuff.

9 **HYPERDICTIONARY.COM:** Every word a link. Every link a definition. This is the way dictionaries should be.

10 **WIKIPEDIA.COM:** The Internet's own free encyclopedia. With more than 170,000 articles, the Wikipedia holds answers to many of your burning questions.

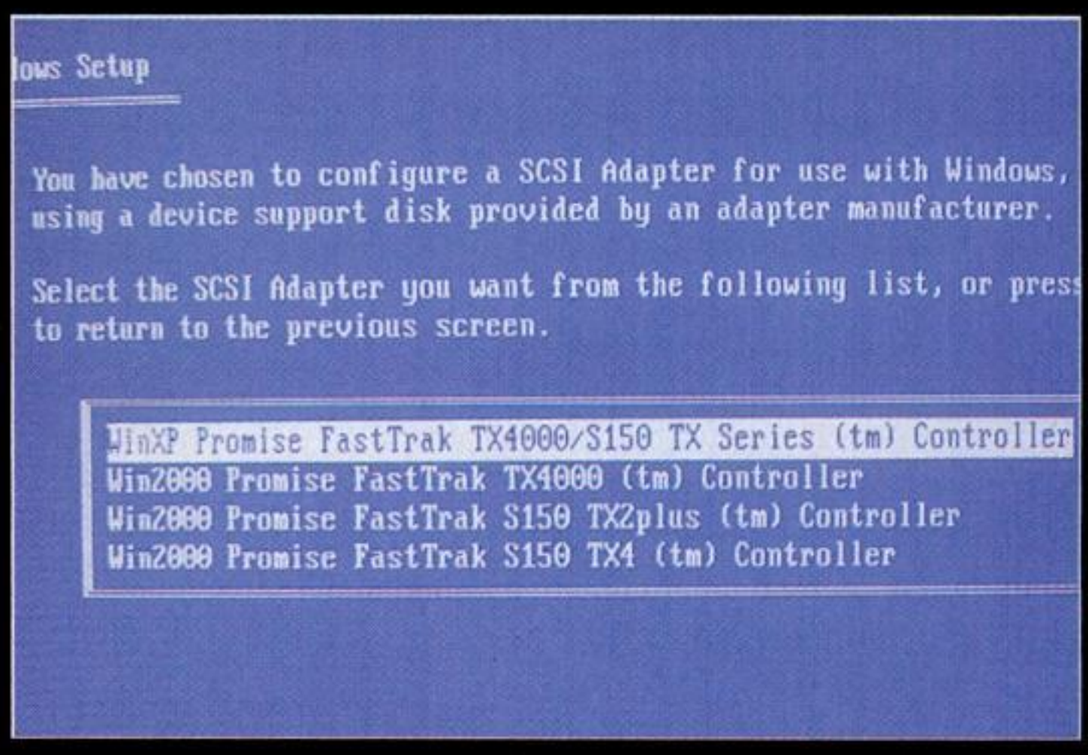
11 **MAXIMUM PC FORUM:** With 2 million-plus posts, the Forum holds the collective wisdom of hordes of helpful *Maximum PC* readers. Go to **www.maximumpc.com** and click Forums.

30 MINUTE How To...

SET UP A RAID ARRAY

Why settle for a single hard drive when you can easily pair it with a second drive and have yourself a RAID array? It's an upgrade that's accessible to anyone! Here's what you need to run RAID: At least two hard drives of the same capacity (and preferably the same make and model) and a RAID controller, which can be either an onboard chip or an add-in PCI controller. Once you have these ingredients, you must prepare your system for a fresh install of your operating system, so back up all your files and make sure you have drivers for the RAID controller on a floppy disc (this is crucial).

Got the files on a floppy? Great. Now attach the hard drives to the RAID controller, insert your XP CD into the optical drive and boot your PC. During boot, a screen following the POST screen will identify the RAID controller and the drives attached to it along with a prompt to set up your array. Press the buttons as instructed on the screen (usually Ctrl+F) and select "auto configuration" in order to streamline the array creation process. You will then be prompted to select whether you want a striped or mirrored array. (Striping breaks data into chunks and paints it across both drives to share the workload, and mirroring simply writes everything to both drives so you have a backup in case one drive fails.) Once the wizard finishes creating the array, it will reboot your PC.


lows Setup
You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.
Select the SCSI Adapter you want from the following list, or press to return to the previous screen.
WinXP Promise FastTrak TX4000/S150 TX Series (tm) Controller
Win2000 Promise FastTrak TX4000 (tm) Controller
Win2000 Promise FastTrak S150 TX2plus (tm) Controller
Win2000 Promise FastTrak S150 TX4 (tm) Controller

When you press F6 to install drivers, you'll see a screen like this.

Upon reboot, enter the BIOS and make sure the boot sequence starts with the CD-ROM drive holding the XP CD. Your PC will then commence the XP installation sequence; have your finger poised over the F6 key because you will suddenly be prompted to press F6 to install RAID drivers. Once XP finishes its loading process, you'll be prompted to insert the floppy disc containing the RAID controller drivers. If all goes well, your PC will examine the floppy disc, prompt you to select the correct drivers for installation, and then "see" the RAID array for the first time.

Once this process is complete, you should be able to install XP as if you were using a single hard drive. Congratulations on installing a RAID array—here's your cookie!*

THINGS TO KEEP IN MIND:

→ Running a two-drive striped array doubles your chances of suffering data loss because if one drive fails, you lose the data stored on the entire array. Running this type of configuration without a reliable backup method is like running next to a pool with a pair of scissors while you're staring directly at the sun. It just isn't smart.

→ A hard drive's worst enemy is heat, so if possible leave a gap between the two drives when you mount them for optimum air circulation. Installing a case fan in front of the drives is also a good idea. ■

**cookie not included*

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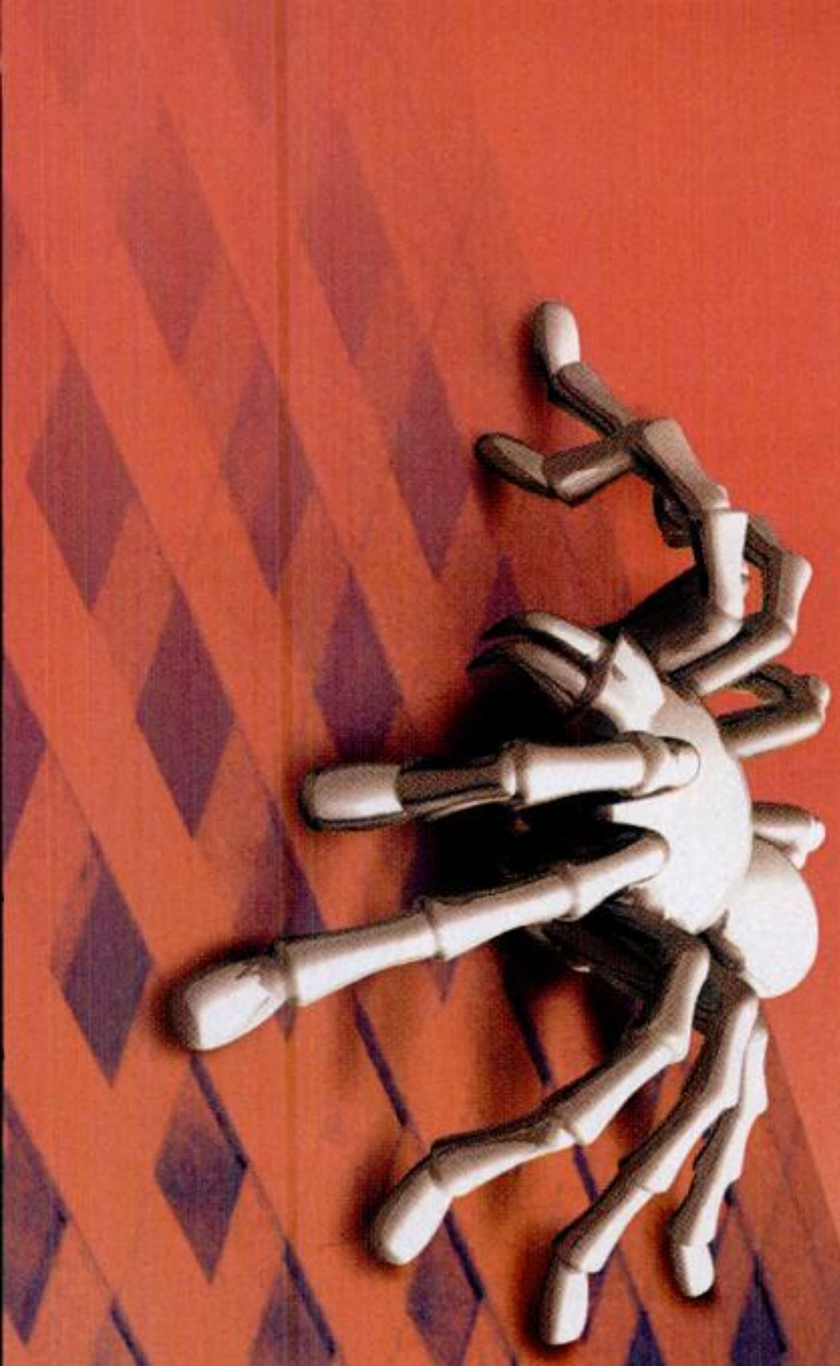


Xpider II

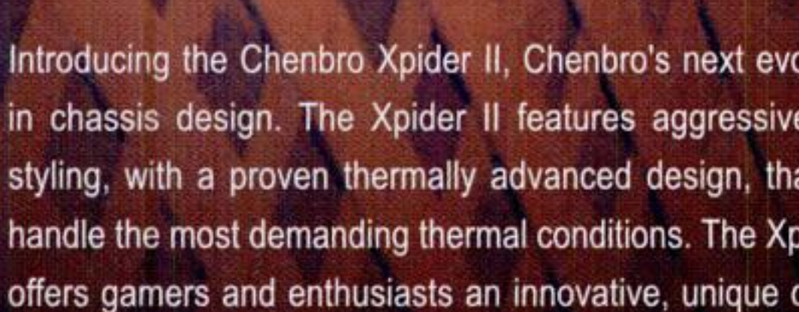
By Gamers, For Gamers

Powering the Gamer's Dream Machine

- Aggressive Styling
- Proven Thermal Design
- Screwless Assembly
- Innovative See-Through Side Panel
- Intel Prescott™ & AMD Athlon 64/FX Ready

Introducing the Chenbro Xpider II, Chenbro's next evolution in chassis design. The Xpider II features aggressive new styling, with a proven thermally advanced design, that can handle the most demanding thermal conditions. The Xpider II offers gamers and enthusiasts an innovative, unique design coupled with support for the latest CPUs including the new Intel Prescott and AMD Athlon 64/FX series. Gamers and PC enthusiasts seeking the ultimate gaming system will be attracted to Xpider II's configuration flexibility and innovative design at a price that will not break the bank. See the new Xpider II at your authorized Chenbro dealer.

Color Options



Red Blue White Green

Global ID Patent Pending

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In the Lab

A behind-the-scenes look at Maximum PC testing

Socket 939 Exposed

The big news: AMD is rapidly dismissing socket 940 for Athlon 64 CPUs

If you're not confused enough by the myriad CPU offerings from AMD and Intel, here's one more change to push you over the edge: AMD's Socket 939 will likely be the standard bearer of AMD's performance-oriented CPUs for the foreseeable future. Hopefully, fans of AMD haven't been caught off guard by the news; AMD has always indicated its plans to consolidate around the Socket 939.

To get you up to speed, we put together a short brief on the new socket—including AMD's plans for the older sockets.

What's the key difference between Socket 939 and 940?

Socket 939 may look nearly the same as Socket 940, but there's one key difference: Socket 939 CPUs don't require expensive and hard-to-find registered DIMMs to function. Socket 940 CPUs (which were really just Opteron server CPUs) could only work with registered RAM.

I noticed that AMD has introduced Socket 939 CPUs for both the FX and the normal A64 series. I thought they were different.

One aspect we appreciate about Socket 939 is that it finally brings some much needed harmony back to the AMD universe, something that has been missing since its 64-bit CPUs came out. In the old days, you could buy a Socket A motherboard and choose between a Duron or Athlon XP CPU. Intel's world was the same; you could pick a motherboard that would allow you to buy a low-budget Celeron now and plan for a faster Pentium 4 later. This didn't work in the Athlon 64 world because the CPUs used different memory controllers. Athlon 64 memory controllers were single channel, while the Athlon 64 FX was dual channel. If you bought a Socket 754 motherboard and Athlon 64 3200+, for example, you could never upgrade to an Athlon 64 FX. In the new Socket 939 world, you can.

If both Socket 939 CPUs have the same memory controllers, what's the difference between an FX and a normal A64?

The main difference right now is cache. With the new CPUs that AMD has introduced, the Athlon 64 3800+ will receive 512KB of L2 cache, while the FX will remain at 1MB.

I thought Athlon 64s already had 512KB of cache?

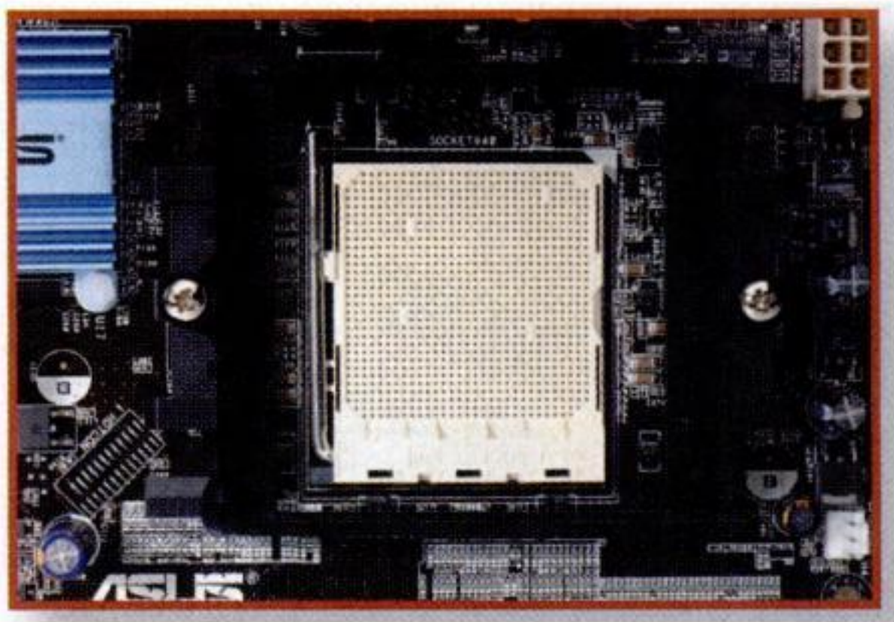
Yes. AMD actually has two cache sizes in its older Socket 754 Athlon 64s. The Athlon 64 3400+ and the new 3700+, for example, have 1MB of L2 while the old Athlon 64 2800+ has just 512KB of cache. Making things even more confusing, some versions of the Athlon 64 have the same speed rating but different clock speeds and cache sizes, like the Athlon 64 3200+. The same "3200+" is available as either a 2GHz CPU with 1MB of L2 cache or 2.2GHz CPU with 512MB of L2 cache.

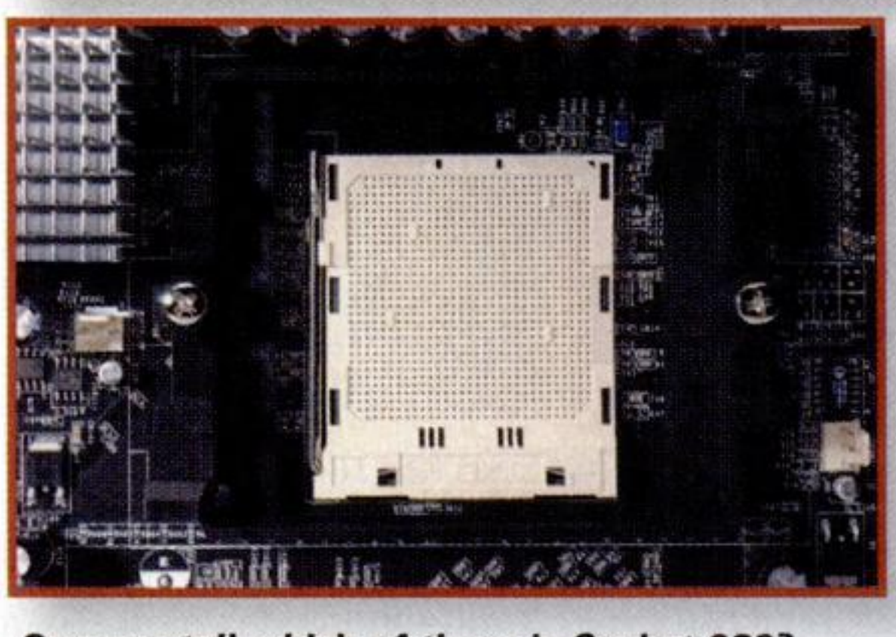
What happens to the older interfaces?

When we spoke to AMD officials, we were told that Socket 754 will continue to be supported. Rumors have also indicated that AMD may actually introduce a 32-bit only version of a CPU in Socket 754. Socket 940, however, isn't being treated similarly. Backpedaling on previous pledges that it would support Socket 940 through the year with parallel launches (the FX-55 version of the Athlon 64 FX was supposed to ship in both Socket 939 and Socket 940 versions), AMD now says the support will only come through Opteron upgrades. Because Socket 940 will still be the home for Opteron, Athlon 64 FX users will theoretically be able to upgrade to the next spin of the Opteron.

But, umm, Opteron comes out in slower cycles. Doesn't that mean FX users get screwed?

Well, yes, but at least the Opteron is cheaper. An Opteron 148 at 2.2GHz costs about $400; the 2.2GHz FX-51 still costs about $700. But we have to admit that we are a little disturbed that AMD appears to be dismissing its previous pledge. We're hoping the company reconsiders its support for Socket 940.





Can you tell which of these is Socket 939? They look nearly the same, but Socket 940 (top) and Socket 939 (below) are most definitely incompatible.

DARE TO COMPARE: ATHLON 64 SOCKETS

	Old	New	Old	New
CPU	Athlon 64 FX 53	Athlon 64 FX 53	Athlon 64 3700+	Athlon 64 3800+
Clock speed	2.4GHz	2.4GHz	2.4GHz	2.4GHz
Interface	Socket 940	**Socket 939**	Socket 754	**Socket 939**
Memory controller	dual / 128-bit	dual / 128-bit	Single / 64-bit	**dual / 128-bit**
Type of RAM	Registered	**Unbuffered**	Unbuffered	Unbuffered
L2 cache	1MB	1MB	1MB	**512KB**
64-bit support?	Yes	Yes	Yes	Yes

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Zip-Linq Wireless Phone Charger Kit

TESTED & GEEK APPROVED

The Leatherman of phone chargers

Zip-Linq helps clear up cable clutter and free your precious power outlets with its USB phone charger kit. Instead of using the giant cell phone power brick that blocks two or more outlets, you can just plug your phone into a nearby USB port.

While we found charging our phone off USB to be a bit slower than plugging it into the wall, it's a great way to salvage some extra power outlets. Each kit includes a set of phone adapters, an AC adapter for wall outlets, a car adapter, a retractable USB 1.1 cable, and a nylon baggie for storing it all.

It's a great deal, considering that $30 gets you a car, wall, and USB charger for a handful of phones, and a retractable USB 1.1 cable for any other use to boot! **www.ziplinq.com**

Viva Aria!

These mobos are compatible with Antec's Aria SFF box

You know how we gushed about Antec's Aria small formfactor case in the June issue but said we couldn't get a list of compatible micro ATX mobos from Antec? Well, it turns out we actually had the list the whole time. In the interest of setting the record straight, here's a short list of boards that should work in the Aria: MSI K7N2GM-L, MSI RS3M-IL, Intel D865GLC, Intel D865GLCL, Asus A8N8X-VM, Asus P4P800-VM, and Abit IS-12. Antec says it can't actively endorse any of the motherboards listed above but the company is more than happy to steer customers in the right direction should they need help selecting a compatible board (**www.antec-inc.com**).

Best of the Best

As of August, 2004

A momentous event for archivists: Sony has introduced the world's first dual-layer DVD burner: the DRU-700A. While dual-layer media isn't cheap or plentiful, we can't see any reason to want a single-layer burner at this point (for holdouts we recommend Plextor's new PX-712A as the best single-layer burner.) We've also given the nod to NEC's popular FE21111SB as the best CRT monitor, after it edged out Sony's CRT in the July issue. We have two other CRT reviews coming next month that could change this verdict, so stay tuned. On hold this month is our Athlon 64 FX motherboard pick. With the introduction of Socket 939 CPUs and mobos, it doesn't make any sense to buy a Socket 940 board at this point. And, while we think highly of Asus A8V, we're reserving judgment until we can get test time with other Socket 939 motherboards with competing chipsets. There's a shocking development in gaming this month: While the staff won't admit it, several editors have been spotted playing *Singles: Flirt Up Your Life!*

High-end videocard:
ATI Radeon X800 XT Platinum Edition

Budget videocard:
ATI Radeon 9800

Do-everything videocard:
All-in-Wonder Radeon 9800 Pro

Soundcard:
Sound Blaster Audigy 2 ZS Platinum

Serial ATA hard drive:
Western Digital 740GD/ IBM 7K250

Parallel ATA hard drive:
Hitachi 7K400

CD-RW drive:
Plextor PlexWriter Premium

DVD burner:
Plextor PX-708A

LCD monitor:
Dell 2001FP

High-end CRT monitor:
NEC FE2111

Budget CRT monitor:
Cornerstone P1750

P4 motherboard:
Abit IC7-MAX3

Athlon XP motherboard:
Hold Asus SK8V

Athlon FX motherboard:
Asus SK8V

Portable MP3 player:
Apple iPod 40GB

Photo printer:
Canon i9900

Pocket PC PDA:
HP iPaq 5555

Palm OS PDA:
Palm Tungsten C

7.1 speakers:
Creative Labs 7.1 Gigaworks S750

5.1 speakers:
Logitech Z-680

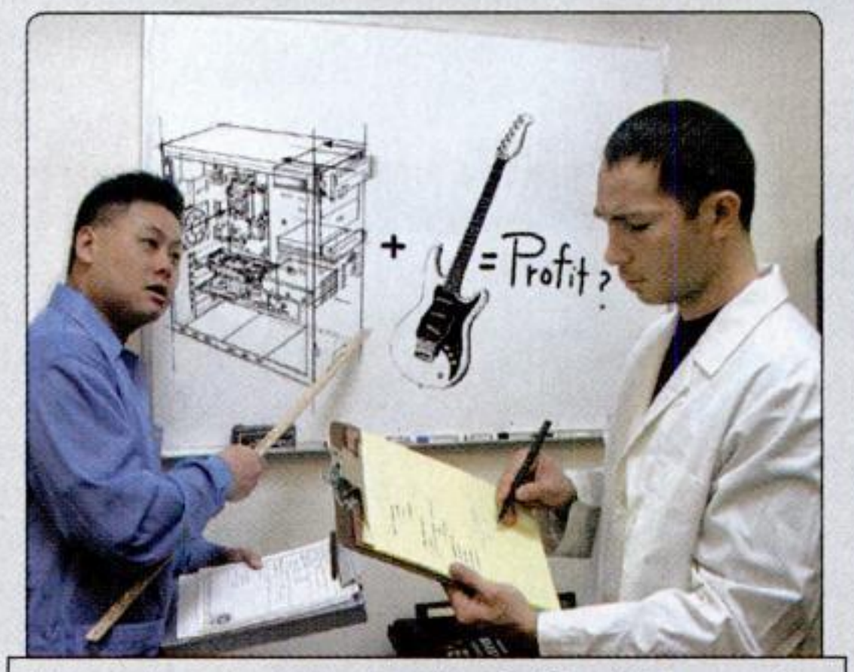
4.1 speakers:
Logitech Z-560

2.1 speakers:
Logitech Z-2200

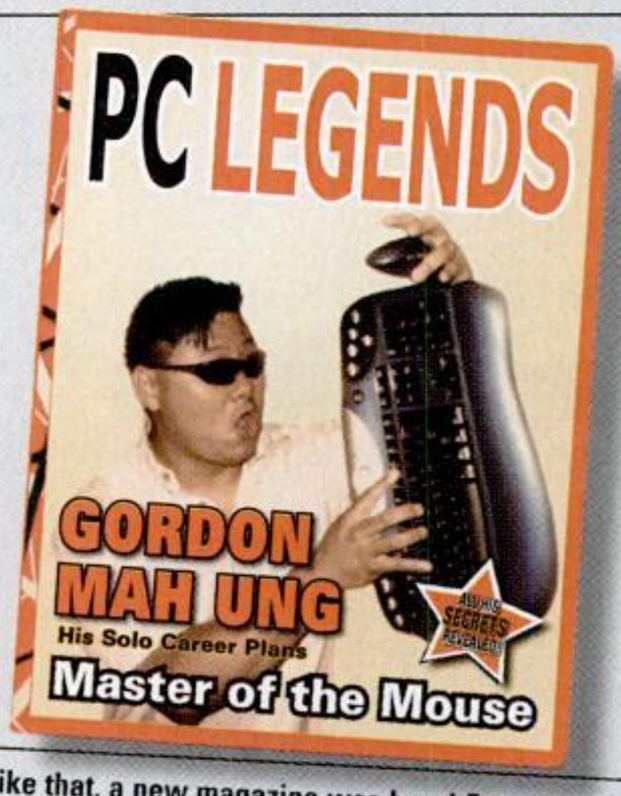
Our current gaming favorites: *Thief 3, City of Heroes, Singles: Flirt Up Your Life!, Painkiller*

A Legend Is Born

We were green with envy that our sister magazine *Guitar World* produced a special "legends" issue. Even worse, it was positioned next to our magazine in our corporate lobby, stealing all the glory.



Not wanting to be outdone by a bunch of long hairs, we put our heads together and tried to come up with a PC-based cover that would rock as hard as *Guitar World* on the newsstand. They will rue the day they went head to head with the most kick-ass PC magazine on the planet!



And just like that, a new magazine was born! For our first issue, we caught up with PC Legend Gordon Mah Ung on his "Ung-Rebooted" tour and have the exclusive details on his stage rig, his thoughts on the "Piccard versus Kirk" debate, and more. Don't miss it!

Copyrighted material

Marauder Plus 64

What a shame—this PC is fast, but lacks stability

The Maximum PC Lab receives many high-end systems for review, most of which are quite similar in terms of components and performance. So when we receive a system that manages to set itself apart from the others, it's always a welcome breath of fresh air.

Marauder's Plus 64 system immediately distinguished itself by being one of the quietest systems we've ever reviewed—one editor even had to open the case to convince himself the machine was actually on. The Plus 64 is also one of the first systems we've received that features a next-gen videocard, namely an e-VGA e-GeForce 6800 Ultra that made mincemeat of our gaming benchmarks. Sadly, the Plus 64 made a less-than-favorable impression by faltering where few other high-end systems do: Stability. It crashed repeatedly during testing.

That's a shame because the Plus 64 has everything we look for in a quality system. It has a speedy Athlon 64 3800+ processor, two gigs of high-end Corsair RAM, and a solid, feature-laden motherboard—the Asus A8V Deluxe (reviewed on page 69). The system also features two roomy 160GB hard drives in a RAID 0 configuration, a wealth of removable storage options, and the benchmark-busting 6800 Ultra. And thanks to its whisper-quiet CPU, case fans, and Akasa PaxMate soundproofing material adorning the case doors, it generates very little noise.

The Plus 64 blew us away with its performance in our gaming benchmarks. We had to search for dental records to identify what was left of *Halo* and *Jedi Academy* after the Plus 64 was finished with them. Our review unit netted 74.3 frames per second in *Halo* and 105 frames per second in *Jedi Academy*, nearly double that of our zero-point system scores. Impressive, and if the review were to end here, we would slap on a score of 9 and the Kick Ass! logo and call it a day.

Here's where the review turns ugly. The Plus 64 coughed up a disappointing 161 score in *SYSmark 2004*, which is low for an Athlon 64-based system. The 3800+ processor's 512k L2 cache is partly to blame. Even worse, obtaining a usable *SYSmark 2004* score was an ordeal—we experienced a sporadic series of random lockups and crashes when installing the benchmark software. Only after repeated attempts to install and run *SYSmark 2004* were we able to generate a score. To be fair to Marauder, this doesn't mean every system the company builds will suffer such instability, and the company does offer a one-year warranty and a 30-day money-back guarantee for its products. But still, it was immensely disappointing to encounter such problems in a $3,200 system.

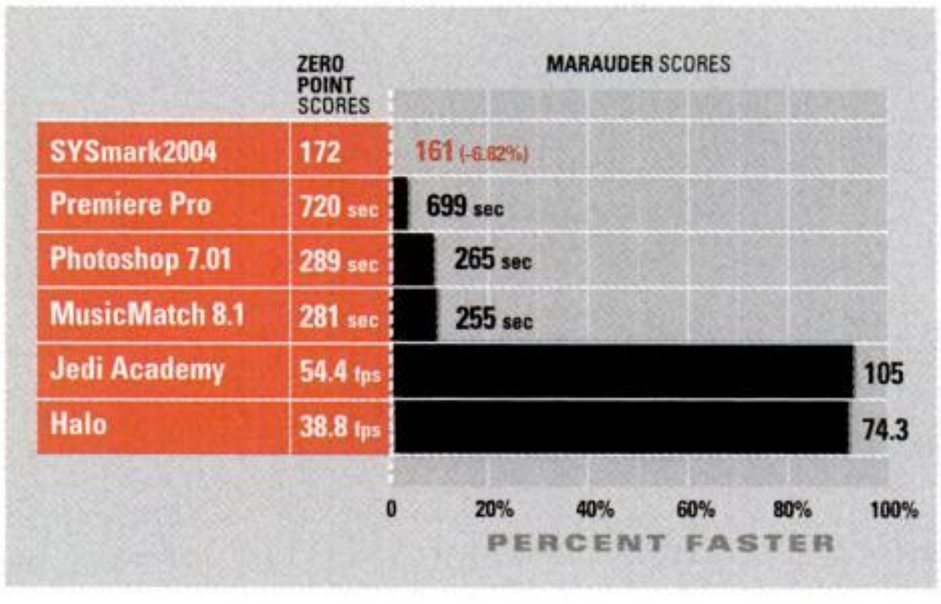
What's more, the Plus 64 lacks a dedicated soundcard. While the A8V mobo's integrated audio delivers decent output and features eight channels of sound and a SPDIF out, we're accustomed to hearing Audigy 2 ZS-caliber sound from a primo PC.

—TAE KIM

The Plus 64's case comes with soundproofing and fans, resulting in a PC so silent one *Maximum PC* staffer didn't believe it was on!

UNDER THE HOOD

THE BRAINS	
CPU	AMD Athlon64 3800+ (2.4 GHz clock speed)
Mobo	Asus A8V Deluxe (Socket 939, Via K8T800 Pro)
RAM	2GB Corsair XMS (4 x 512MB modules)
I/O ports	Six USB 2.0 (two front, four rear), one parallel, one serial, two IEEE 1394, SPDIF out, optical in
LAN	Integrated Gigabit Ethernet, integrated 802.11 Wi-Fi
DISPLAY	
Videocard	eVGA e-GeForce 6800 Ultra (450 MHz core, 600 MHz DDR)
STORAGE	
Hard drives	2 x 160GB Seagate Barracuda V (7200RPM, SATA) in RAID 0
Optical	Lite-On DVD+/-RW burner (SOHW812S, 8x DVD+/-R, 4x DVD+/-RW, 12x DVD, 40x CD-R, 24x CD-RW, 40x CD), Samsung DVD/CD-RW combo (SM-352BEN/B, 16x DVD, 52x CD-R, 24x CD-RW, 52x CD)
Other	Mitsumi 1.44 floppy
AUDIO	
Soundcard	Integrated RealTek ALC850 8-channel audio
FINE DETAILS	
Case	Evercase GC4292 case
Power supply	Zalman ZM400A 400W PSU
Fans/extras	Zalman CNPS7000A CPU fan, 120mm exhaust fan, 2x 60mm intake fan, Akasa PaxMate soundproofing
BUNDLE	
Windows XP	
BOOT: 47 sec.	**DOWN: 23 sec.**



Our zero-point system includes: a 2.2GHz Athlon 64 FX-51, an Asus SK8N motherboard, 1GB of Corsair Registered TwinX DDR400 RAM, an ATI Radeon 9800 XT, a 250GB Western Digital WD2500JB hard drive, Plextor PX-708A DVD burner and a PC Power and Cooling TurboCool 510 Deluxe power supply.

MAXIMUM PC VERDICT 5

MOS DEF

Fast game performance, amazingly quiet.

DEF LEPPARD

Unstable, low *SYSmark 2004* score, no dedicated soundcard.

$3,200, www.marauderpc.com

Copyrighted material

Sharp Actius PC-MM20

Fueled by Transmeta's new Efficeon CPU, this ultra-light mini-laptop still gets outperformed by Centrino

If you've followed our on-and-off love affair with Transmeta CPUs you know the relationship hasn't been so passionate since Intel's lovely Pentium M caught our eye. In fact, we wondered whether Transmeta's procs would ever capture our hearts again—at least until we saw Sharp's sexy Actius PC-MM20 notebook featuring Transmeta's new 1GHz Efficeon CPU.

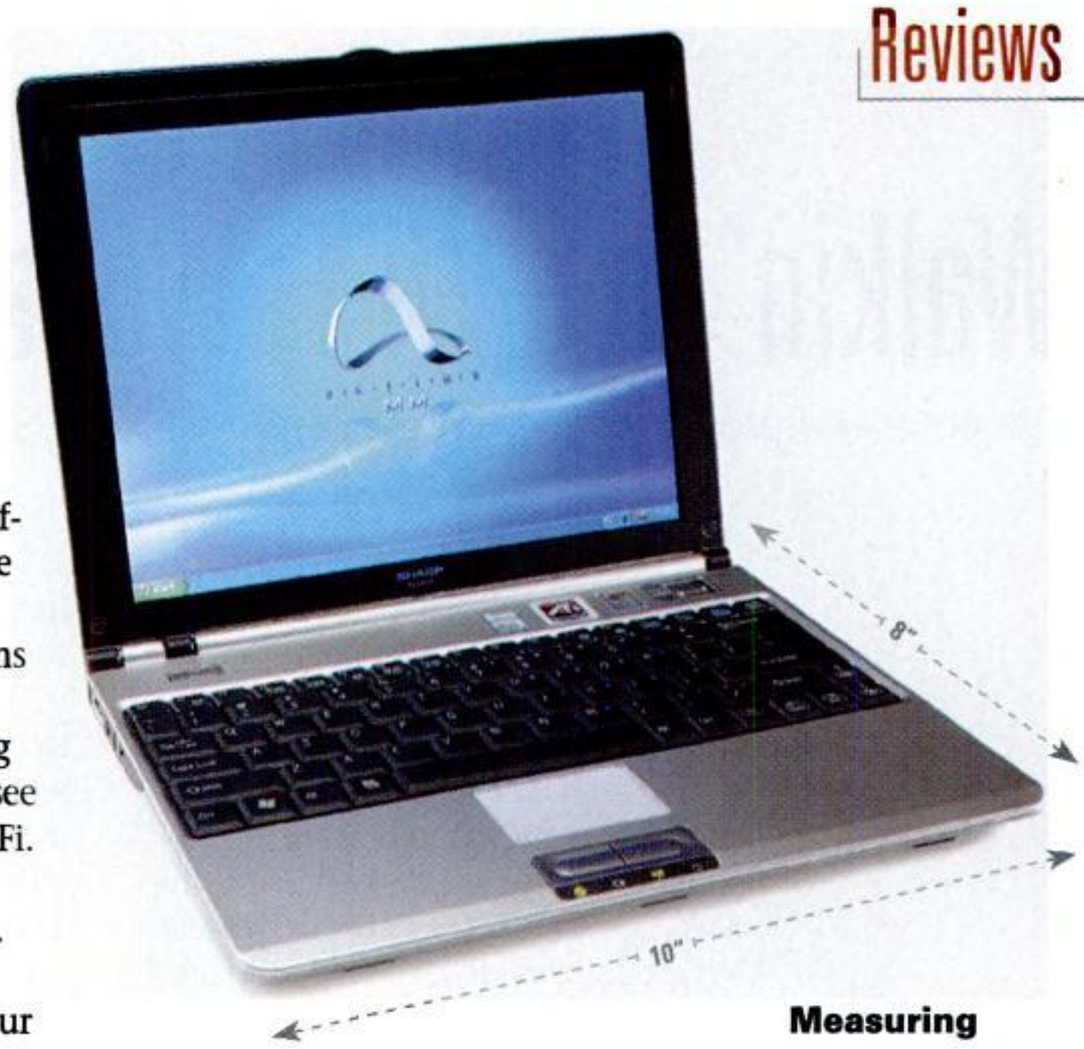
The Actius definitely has the looks—and the size. At its thickest section, it measures less than an inch. With its standard battery, the Actius tips the scale at two pounds and makes even the diminutive Sony PCG-TR2A we reviewed in May seem bulky. The price of such a dainty profile is storage—the Actius eschews an optical drive and floppy. Its lone hard drive is a 20GB Travelstar, which is simply too small for modern computing.

Ergonomically speaking, the keyboard is a tad cramped and certainly not as comfortable as Sony's PCG-TR2A, but there are no horribly misplaced keys like on Fujitsu's P5020 series. We were dismayed by the presence of a switch above the keyboard that lets you toggle between two different performance speeds—mobile and normal—as a way of dictating power consumption. A switch seems silly when modern CPUs should be capable of intelligently adjusting power settings. We'd much rather see a switch for turning off and on Wi-Fi.

We are pleased, however, with Sharp's unique Connection Cradle. With the included *SharpSync* software you can sync files between your desktop and portable automatically. This makes the lack of an optical drive more tolerable. Still, power users are going to find themselves bumping up against the Actius' 20GB hard drive ceiling in no time.

Transmeta says its Efficeon CPU offers 50 percent more performance in most applications, and as much as 80 percent in multimedia apps when compared with its older Crusoe CPU. This jibes with our experience, as the 1GHz TM5800 Crusoe could barely run Windows XP. But the Efficeon's competition isn't the Crusoe, it's the ultra-low voltage version of Intel's Pentium M—known as Centrino.

While it's impossible for us to isolate the CPU and chipsets from their respective notebooks, we can say that the Efficeon/Actius PC-MM20 is inferior to the 1GHz Centrino/Sony TR2A combo we reviewed in May. The Actius ran about 14 percent slower in our applications test, *SYSmark 2002*. The Actius also trailed Sony's TR2A by about 20 percent in the *Premiere 6.0* and *Photoshop 7.0* benchmarks. In gaming, the PC-MM20 barely pushes the five-year-old *Quake III Arena*, despite the its ATI graphics badge.



Measuring less than an inch thick and weighing a mere two pounds, Sharp's new Actius is the epitome of petite.

Because the PC-MM20 doesn't ship with an external optical drive, we tested its battery life by playing back a ripped DVD from the hard drive. The Actius' ultra-slim battery provided about 95 minutes of power. When we switched to the bulkier extended battery, however, we could watch 289 minutes of a movie, which is great—albeit a 50 percent weight increase.

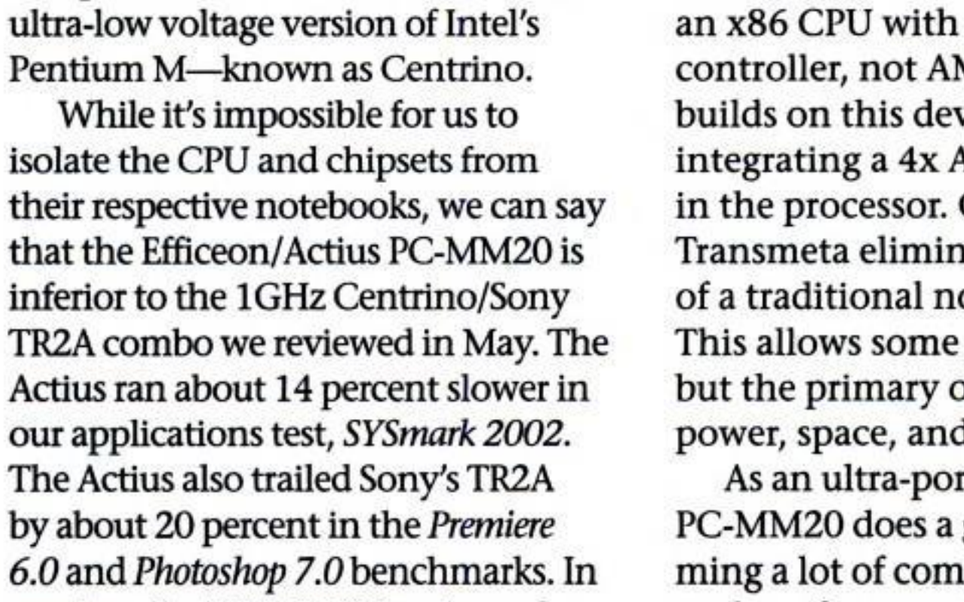
The Efficeon may not be the fastest mobile CPU, but this doesn't mean it's not highly advanced. Transmeta was the first to introduce an x86 CPU with an on-die memory controller, not AMD. The Efficeon builds on this development by also integrating a 4x AGP controller in the processor. Consequently, Transmeta eliminates the necessity of a traditional north bridge chip. This allows some performance gain, but the primary objective is to save power, space, and cost.

As an ultra-portable, the Actius PC-MM20 does a good job of cramming a lot of computing into a wee package for a reasonable amount of cash. The performance won't floor you, but with this formfactor, performance takes a back seat to portability.

—GORDON MAH UNG

UNDER THE HOOD

THE BRAINS	
CPU	1GHz Transmeta Efficeon TM8600 with 1MB of L2 cache
RAM	512MB DDR400
I/O ports	Two High-Speed USB 2.0, VGA out (with dongle), Fast Ethernet (with dongle), headphone
Modem	V.92 PC Card
LAN	Express 8.02.11G, RealTek RTL8139 Fast Ethernet
DISPLAY	
Video chip	ATI Mobility Radeon
LCD	10.4-inch 1024x768
STORAGE	
Hard drive	Hitachi Travelstar 20GB DK14FA-20 4200RPM
SOUND	
Audio chip	RealTek AC97
TIPPING THE SCALES	
Lap weight	2 pounds
Carry weight	2.1 pounds
BUNDLE	
Windows XP Home	
BOOT: 25 sec.	DOWN: 15 sec.


ZERO POINT SCORES
SHARP ACTIUS PC-MM20 SCORES
SYSmark2002 150 101 (-32.67)
Premiere 6.0 720 sec 968 sec (-25.62)
Photoshop 7 91 sec 104 sec (-12.50)
Audio Grabber 549 sec WNR
Quake III 63.4 fps WNR
Battery Test 235 min WNR
0 20% 40% 60% 80% 100%
PERCENT FASTER

*Our zero-point notebook is a Dell Dimension 8200, and includes a 1.7GHz P-4M CPU, 256MB DDR266, a 64MB 128-bit DDR GeForce4 Go graphics chipset, and a 5400rpm IBM Travelstar 60H hard drive. *Our notebook Photoshop 7.0 test differs from our new desktop Photoshop test.*

MAXIMUM PC VERDICT 8

BULLSEYE SAUCE

It doesn't get much thinner or lighter than this.

BULIMIA

No onboard modem. Requires the use of too many dongles.

$1,700 (w/ extended battery)
www.sharpusa.com

Copyrighted material

Netgear's WGT624 can handle even the most demanding wireless networking duties.

Walkin' in a Wi-Fi Wonderland

We poke and prod two new wireless routers from SMC and Netgear

We don't see a whole lot of innovation on the router front. Generally, products in this category either work or they don't. They deliver the speed they promise or they don't. They're easy to configure or they aren't. Both the SMC 2304WBR-AG and the Netgear WGT624 provide an acceptable level of service and some above-average features. Let's take a closer look to find out which one's best for you.

—WILL SMITH

The SMC 2304WBR-AG uses two antennas, one for 802.11a and one for 802.11b/g.

SMC 2304WBR-AG

This router sports one heckuva long model number, but that's acceptable because it packs so many advanced features. Essentially two access points in one box, the SMC 2304 includes both an 802.11a AP and an 802.11g AP for the ultimate in cross-standard compatibility. Because the integrated 802.11g hardware also supports the original 802.11b spec, this AP will work with every Wi-Fi compatible device ever made. That's pretty damn cool. Very few people actually bought into the 802.11a spec, but if you have 802.11a hardware, it's handy to be able to connect to your wireless network without using annoying external adapters.

The 2304 performed admirably in our standard file transfer test, where we measure the length of time it takes to upload a 530MB MPEG2 video file from a wireless laptop to a wired desktop, and then measure the time it takes to download it back from the wired machine to the wireless machine. We were especially impressed with the 262 second upload time, which is one of the fastest we've seen to date.

Unfortunately, the web-based configuration utility used to manage the 2304's more advanced features is clunky and unintuitive. Frequently, interrelated options will be buried far away from each other in completely different menus. Network administrators may understand the ordering, but your grandma might have trouble keeping up.

Netgear WGT624

Unlike the SMC router reviewed above, the Netgear WGT624 does not support 802.11a networks. Of course, given the paltry adoption numbers, few have been missing this elusive spec. Unless you have legacy 802.11a hardware, g is all you need.

Performance is on par with other 802.11g hardware we've tested; it took a little less than five minutes to transfer our 530MB test file. That's still nowhere near as fast as a good old-fashioned wired connection, but it's an order of magnitude faster than an old-school 802.11b connection.

We are extremely pleased with Netgear's easy configuration routine, and the web-based config utility provides convenient access to every setting you could possibly need. It's easy to set up port forwarding for your home-based web server or even a virtual DMZ for those few games that don't work well through NAT-based routers.

Whether you're looking to set up your first wireless network or to make the jump from 802.11b to 802.11g, either of these routers will serve you with aplomb.

BENCHMARK CHART

ROUTER	WIRED TO WIRELESS	WIRELESS TO WIRED
Netgear WGT624	256 sec	289 sec
SMC 2304WBR-AG	296 sec	262 sec

Note: All tests are run in the 802.11g exclusive mode. To test, we measured the length of time it takes to copy a 530MB file from a wired machine to a wireless machine, and then how long it takes to copy the same file from the wireless machine back to the wired machine.

SMC 2304WBR-AG

MAXIMUM PC VERDICT 9

+ MARCONI

A powerful feature set, and a four-port switch combined with support for all the major Wi-Fi specs.

– MORSE

You pay a premium for 802.11a support, which you'll probably never use.

$170, www.smc.com

Netgear WGT624

MAXIMUM PC VERDICT 8

+ WEB SURFING WIRELESSLY

Its small size conceals a four-port switch and a top-class 802.11b access point.

– BUNGEE JUMPING WIRELESSLY

The 108Mb/s mode doesn't really improve performance all that much.

$130, www.netgear.com

IS DOUBLE-SPEED 802.11G EVEN NECESSARY?

The 802.11g spec promises a whopping 54Mb/s data transfer rate, and newer premium models, such as the two reviewed here, even tout the ability to bond two normal 802.11g Wi-Fi channels together to create a single double-speed connection. Is there any reason to shell out extra cash for double-speed Wi-Fi products? Let's take a look at the amount of bandwidth delivered.

The average broadband connection delivers at most 1.5Mb/s of bandwidth to your home, much less than the maximum practical bandwidth of even 802.11b. So, if you're just using your wireless network to share Internet access, there's no reason to shell out for an expensive 108Mb/s router.

What about sharing music and video? Well, streaming a 192kb/s MP3 file uses only 192kb/s of bandwidth. Video is significantly more intensive, though—a DVD quality video will eat 4 or 5Mb/second of bandwidth.

The bottom line is that unless you want to stream lots of high-quality video or transfer large files across your wireless network, there's really no reason to pay a premium for greater than 802.11g performance.

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PalmOne Zire 31 and 72

We've a few qualms with these upgraded Palms

Today's Pocket PCs are bulking up faster than Kirstie Alley with multiple wireless options, higher-resolution screens, and just about every feature save a pregnancy test kit. Leave it to Palm to keep a cool head and offer not one, but two new models designed for a somewhat more relaxed crowd. Here's a close look at how well the Zire31 and the Zire72 serve up the essentials in the budget PDA category.

—LOGAN DECKER

PalmOne Zire 31

At first glance, PalmOne's Zire 31 is exactly what it appears to be—a competent but by no means luxurious PDA that throws in just enough multimedia features to keep you from death-by-boredom at the airport.

Inside you'll find a 200MHz ARM proc with 16MB RAM (14MB available to the user) running Palm OS 5.2.8. The handheld weighs less than five ounces, and the most notable departure from previous designs are the two dedicated program buttons on the face (instead of the traditional four). The display resolution remains at a homely 160x160, but if you use your PDA for expense reports and quick notes, you'll be fine. A bigger disappointment is the Zire 31's abandonment of the so-called "Universal Connector" found on the Tungsten models. Instead, it uses an AC adaptor and USB miniport cable combo.

We got slightly more than four hours from a full battery charge, switching between MP3 and video playback. PalmOne says the PDA should last about a week between charges under "normal use," and our tests suggest this is accurate if you don't frequently use it for media playback.

The Zire 31 benefits from the signature ease of use of the Palm OS (and the bundled *Outlook* conduits don't hurt either), but if you want to take advantage of the multimedia capabilities, you'll need a built-in MP3 player. You'll also need to buy a hefty SD card for the expansion slot—MP3s can only be loaded and played from these flash memory cards.

The Zire 31 may lack the frills of higher-end PDAs, but it has something they never will—a $150 price tag.

Modest and utilitarian, the Zire 31 is still a slightly better value than its big brother.

PalmOne Zire 31

MAXIMUM PC VERDICT 7

+ SURROUND SOUND

Inexpensive yet cheerful looking PDA with all the essentials.

− BROWN NOISE

Display somewhat dim. No Universal Connector. RAM-deprived.

$150, www.palmone.com

PalmOne Zire 72

The Zire 72 is a big step up from the Zire 31. At $300, it had better be. The most significant upgrade is Intel's 312MHz XScale PXA270 processor which Intel claims should provide more speed than the previous PXA255 series while simultaneously using less power—a strategy obviously designed for PDAs that expect heavy multimedia use.

There's 32MB of internal memory (24.7 of which is available for use) and a bright 320x320 display. Unfortunately, like the Zire 31, the Universal Connector has been dropped in favor of a USB miniport and power jack combo. Tragically, no docking station or cradle is included; that's an accessory we expect in a PDA at this price.

Sexy on the outside, but less so on the inside, the Zire 72 disappointed us.

PalmOne Zire 72

MAXIMUM PC VERDICT 6

+ CIVIC BEAUTIFICATION

Fast proc, bright screen, and fantastic Bluetooth implementation.

− COW MUTILATION

Distressingly short battery life and crappy camera.

$300, www.palmone.com

One of the great successes of the Zire 72 is its implementation of Bluetooth. A convenient, wizard-like front end connected us in seconds to our PC, laptop, and a Sony Ericsson 616 phone without a hitch. Unfortunately, we eked out a mere three and a quarter hours of multimedia playback with Bluetooth enabled compared with more than four hours with Bluetooth disabled; you'll have to remember to disable it when not in use. Wi-Fi users are out of luck—this PDA doesn't support it.

The Zire 72 throws in a 1.3 megapixel camera that's also capable of recording short video clips. Photos and video are recorded only to your SD card, and are of course limited by its capacity. The camera's shutter speed feels extremely slow, so much so that it was nearly impossible to eliminate blur from our pictures. And the video clip results wouldn't likely be admissible in court.

Given the advancing threat posed by Smartphones like the Treo 600, we're extremely disappointed by the Zire 72. Although it's got the processing muscle for handheld gaming, it does little else to justify its price besides a lame camera and weak battery life.

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Kanguru QuickSilver Combo 120GB

Almost everything we could 'hop' for in an external drive

Most external drives aren't supposed to be transported, but the QuickSilver encourages this behavior by including a marsupial-like pleather pouch (not shown).

We've said it before and we'll say it again—owning an external backup drive is the "in" thing these days, the PC equivalent of having long sideburns during the *Beverly Hills 90210* era. And like cheek chops, backup drives come in all shapes, sizes, and flavors. This month we look at Kanguru's120GB QuickSilver Combo drive. The "Combo" moniker refers to the drive's USB 2.0/1.1 and FireWire ports, which make it eminently compatible, whether you own a PC or Mac. As an added bonus, the QuickSilver's dual FireWire ports can handle the 800MB/s spec as well as the more common 400MB/s.

The QuickSilver's plastic shell houses a Western Digital 1200BB Caviar hard drive that spins at 7,200rpm and boasts a mere 2MB buffer. FireWire connectivity is provided by the ubiquitous Oxford 911 bridge chip with USB duties handled by an Ali chipset. In Lab testing, we found the FireWire connection to be a smidge faster than the USB connection, but just a smidge. On average, file transfer speeds via either port averaged about 19MB/s.

At the time of this writing, Kanguru includes a free copy of *NovaBACKUP* with the drive, and it's splendidly simple to use. The app allows backup to either magnetic or optical discs and worked flawlessly for us. You can also use the app to schedule backups, restore files, and even scan your backups for viruses. Also included: USB and FireWire cables, drivers for Win98SE users, and a faux leather carrying case equipped with several pockets and hook-and-loop straps for keeping the drive secure during transport.

Although we tested the 120GB version, the QuickSilver is available in sizes ranging from 40GB to 250GB, all of which include a one-year warranty. Granted, this drive doesn't really bring anything new to the table, but it certainly covers all the backup bases well, and is affordable to boot. That's the kind of combo we like.

—JOSH NOREM

MAXIMUM PC VERDICT 9

+ FURRY POUCH

Affordable, highly portable, compatible with any PC.

– FURRY COUCH (DAMN CATS!)

No-frills package, semi-cheesy exterior.

$180, www.kanguru.com

SimpleTech SimpleDrive External 400GB

A really big drive with a few small problems

Take one Hitachi 7K400, wrap it in an aluminum shell, and voila—you have the largest capacity consumer backup drive available.

See that 120GB backup drive at the top of this page? It's a nice drive, for sure, but you could fit three of those lil' buggers inside this big mamma jamma. With its 400GB capacity, the SimpleDrive is, quite simply, the largest capacity backup drive on the market.

The mammoth capacity comes compliments of Hitachi's Kick Ass-winning 7K400 7,200rpm hard drive. SimpleTech has taken the drive, wrapped it in aluminum, attached a USB 2.0 bridge chip, and dubbed it the SimpleDrive. It ships with a USB cable, an AC adapter, and a rudimentary backup utility named *StorageSync*.

When used as an external hard drive, the SimpleDrive performs admirably. Transfer speeds average approximately 21.5MB/s—which is as fast as we've seen for an external drive—and the temperature of its outer shell never rose above lukewarm, even during torture tests. The drive makes a bit more noise during operation than other external drives we've tested, but its aluminum casing still keeps it quieter than your average "naked" 3.5-inch hard drive.

The other half of the SimpleDrive equation is its bundled *StorageSync* backup software. When we tested this software last month with SimpleTech's 80GB combo drive, we were disappointed by its buggy behavior and frequent crashes. Sadly, the software didn't fare very well this time around, either. While last month we suffered numerous lockups and other anomalies using the application, this month *StorageSync* failed to complete a number of backups and file sync operations. The error messages ranged from "floating point" issues to "no more memory" notices. We tried the software with several different drives in the Lab and achieved successful operation approximately 80 percent of the time; the other times, our backup efforts were met with seemingly random errors. Suffice it to say, we don't recommend using this software with something as precious as your personal data.

Our only other complaint with the drive has to do with the attachable plastic feet that can be used to make the drive stand vertically. It's impossible to slide the sharp-edged brackets onto the drive without scratching its soft aluminum exterior.

In the end, the SimpleDrive presents a compromise. It's the biggest backup drive on the planet, but you'll need to buy a different backup utility, like Dantz' *Retrospect*, if the drive is to reach its full potential.

—JOSH NOREM

MAXIMUM PC VERDICT 7

+ SIMPLE

Huge capacity, speedy operation, reasonable price.

– PIMPLE

Included backup software is unreliable, operation is a bit loud, and feet scratch the case.

$470, www.simpletech.com

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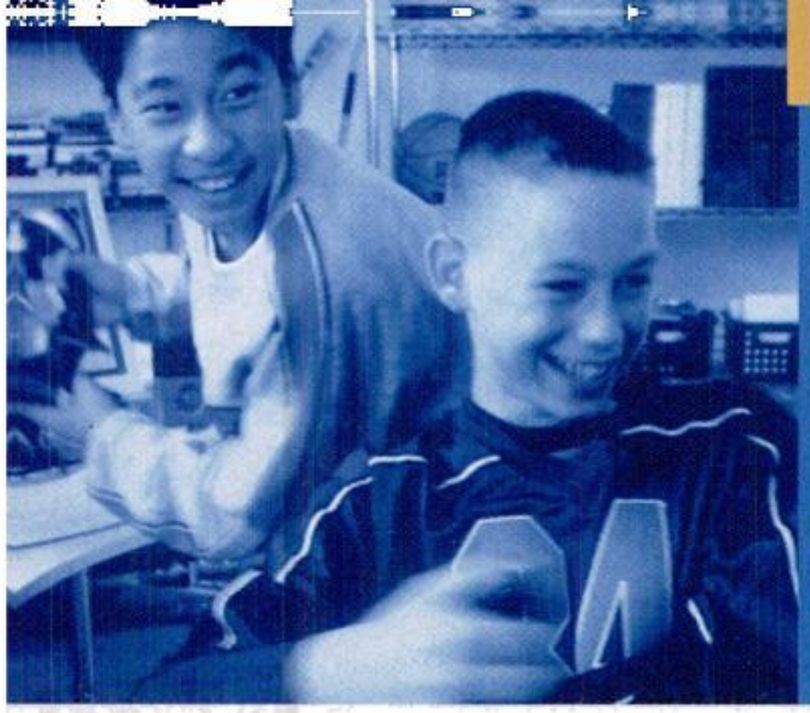


Get to the fun fast...

The Intel® Pentium® 4 Processor with HT Technology is designed for speed.

The ZT PRO System based on the Intel® Pentium® 4 Processor with HT Technology can quickly run multiple applications at one time.
So now you can get to the fun fast.

ZT recommends Microsoft® Windows® XP

ZT PRO GAMING PC X6392

Intel® Pentium® 4 Processor with HT Technology 3 GHz

Microsoft® Windows® XP Home Edition

Intel® D865PERLX (865PE Chipset) Mainboard

512MB PC3200 Dual Channel DDR400

Seagate® 80GB Serial ATA/150 7200rpm Hard Drive

7 in 1 Media Reader & 1.44MB Floppy Combo Drive

16X DVD-ROM Drive
52X32X52 CD-RW Drive

128MB NVIDIA GeForce FX5200 w/TV-Out & DVI

Integrated 6 Channel Audio & Intel® 10/100 LAN

56K V.92 Fax Modem

MID Tower Chassis w/350watt Power Supply

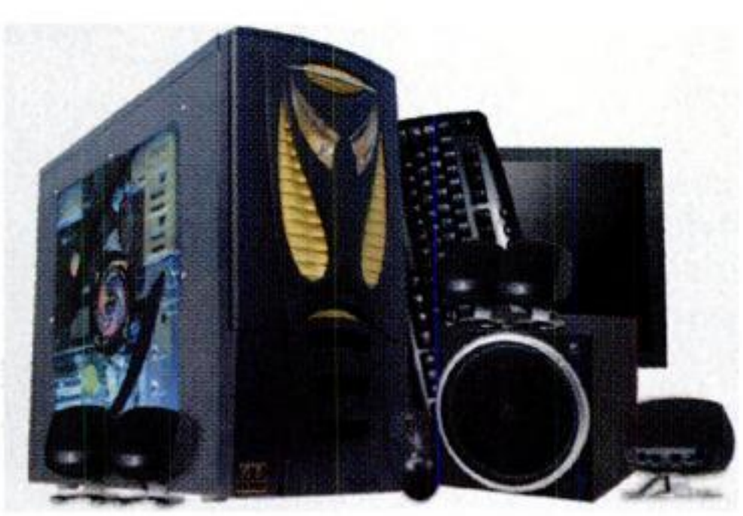
Logitech® Internet Keyboard
Logitech®Optical Wheel Mouse

Microsoft® Works 7.0

3 Years Limited Warranty

$799

NEC 17" Flat Panel LCD Display (Add: $419)
Logitech® X220 3 Pieces Speaker w/Subwoofer (Add: $35)



ZT PRO GAMING PC X6393

Intel® Pentium® 4 Processor with HT Technology 3.20 GHz

Microsoft® Windows® XP Home Edition

Intel® D865PERLX (865PE Chipset) Mainboard

512MB PC3200 Dual Channel DDR400

Seagate® 120GB Serial ATA/150 7200rpm Hard Drive

7 in 1 Media Reader & 1.44MB Floppy Combo Drive

16X DVD-ROM Drive
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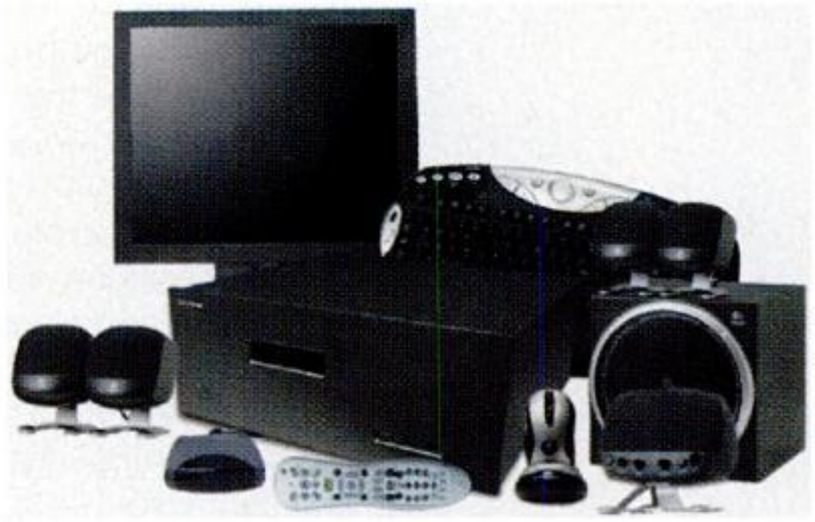

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Sony DRU-700A Dual Layer DVD Burner

Proof that two layers are better than one

Sony even bundles a black bezel with its dual-layer DVD burner for formal evening recording.

Dual-layer burning has arrived, and it's every bit as tasty as we thought it would be. For less than 250 bucks, you can now pack 8.5GB on a single recordable DVD, and make 1:1 copies of your DVD-Video discs without compression. It may not be legal, of course, but that's another story.

Sony's DRU-700A is the first consumer-level burner to offer DVD+R dual-layer recording, and the technology is a modest miracle of engineering. Most commercial DVD-Video discs are comprised of two layers; the bottom layer is stamped on an opaque surface, and the top layer is stamped on a semitransparent surface. This allows DVD players to read from the outside of the disc until reaching the center, at which point the laser refocuses itself to peer through the first layer and onto the second, continuing the read process from the center outwards. (The ability to read dual-layer DVDs has always been a requirement of the DVD specification, so theoretically, all players should be able to play them.) Finding the right dye formulations and substrates that would allow a laser to burn onto the semitransparent layer as well as through it was another matter, however. To their credit, the folks behind the popular DVD+R format developed the technology first. (While DVD-R dual-layer burning has been demonstrated, no PC products have been announced yet.)

Using the DRU-700A, we copied a three hour, 7.9GB commercial dual-layer DVD-Video at a relatively pokey 2.4x in 44:53 (min:sec). But here's the kicker—the disc was read flawlessly by each of the five set-top DVD players we tried it in, and we're talking about model's ranging from an ancient RCA Divx player to Kiss Technology's networked DP-500. We could also play the disc in every DVD-ROM drive we tried it in with the single exception of Plextor's PX-708A, which wouldn't recognize the disc. While we noticed that our burned disc was slower to be recognized than commercial discs, this is likely the result of burned discs' slightly lower reflectivity and not dual-layer technology.

The DRU-700A is no slouch in other formats either. The fastest format remains 8x DVD+R single layer, which took 8:55 to burn 4.25GB of data. 8x DVD-R performance trailed behind at 9:38 doing the same task. 4x DVD+RW burned our disc in 14:25, and although DVD-RW is officially at 4x now, 4x media is nowhere to be found, so burn times are limited to 2x, resulting in a pokey 30:08 to burn a single-layer disc. The DRU-700A is also the fastest combo burner when it comes to CD-R tasks, burning 700MB at 40x in just 3:13. Digital audio extraction was also mighty fast—is this burner the entertainment industry's worst nightmare or what? Sony bundles the drive with the generous *Nero Software Suite*, which continues to boast more features and better performance every time we use it.

So is this the right time to buy a dual-layer burner? We're inclined to say yes, but ultimately it's up to you, and how badly you want it. The DRU-700A works beautifully and we love it, but dual-layer media continues to be scarce, and burning is a relatively slow process right now. We believe you'll see 4x and possibly 8x dual-layer burners by the time holiday shopping comes around.

Whatever you do, don't hold out for dual-layer rewriteable burners. Manufacturers tell us they're still working on this technology, and the majority expressed doubt it will arrive anytime soon, if at all.

—LOGAN DECKER

THE BUNDLE

Ahead *Nero Burning ROM 6*
Ahead *Nero Vision Express*
Ahead *Nero BackItUp*
Ahead *Nero Showtime*

Writes to:	
DVD+R	8x
DVD-R	8x
CD-R	40x
Rewrites to:	
DVD+RW	4x
DVD-RW	4x
CD-RW	24x
Reads:	
DVD-ROM	12x
CD-ROM	40x

BENCHMARKS	DVD	CD
Average data transfer (MB/sec.)	8.1	4.6
Random/full-stroke seek (ms)	110/205	110/221
Audio extraction (min:sec)	–	2:48
Data DVD/CD burn (min:sec)	8:55 (DVD+R)	3:13
CPU utilization	16% (2x)	8% (8x)

** The data CD burn test uses the bundled applications to create a 700MB CD-R. The data DVD burn test uses the bundled applications to create a 4.25GB. The audio-extraction test uses a commercially stamped 74 minute audio CD. All tests were performed using Verbatim media*

MAXIMUM PC VERDICT 9

+ DUAL

The first dual-layer burner is a winner, succeeding where it matters most—compatibility.

– JEWEL

Media is scarce, expensive, and faster dual-layer burners are sure to come soon.

$230, www.sony.com

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Compaq tc1100

Best. Tablet PC. Ever

If you've read *Maximum PC* for any period of time, you know we have a fetish for pen-based computing. Sure, tablet PCs have some minor flaws—like the fact that text and voice recognition are inconsistent—but if you spend lots of time taking handwritten notes, a tablet can revolutionize your world.

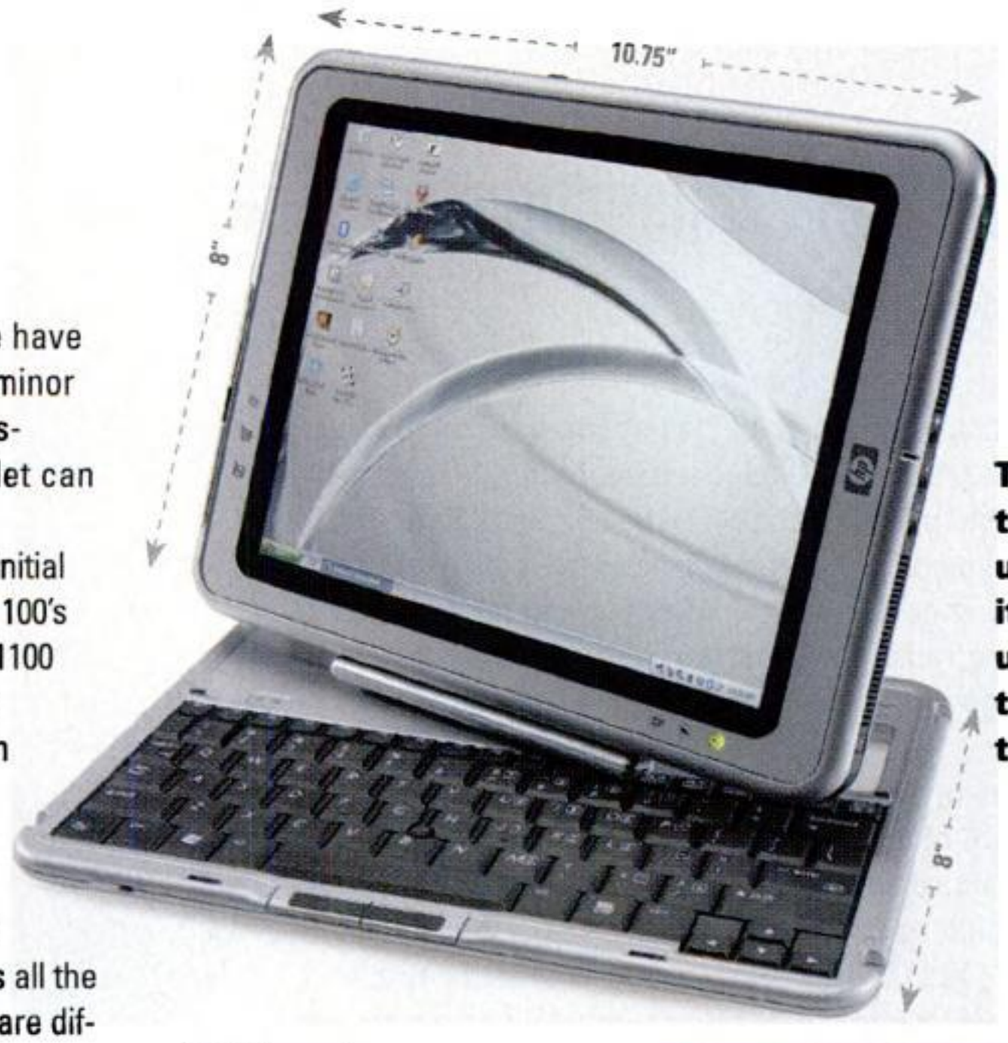
Like all the other tablets we've tested, the Compaq tc1100 uses the initial revision of Windows XP Tablet Edition. The big difference is that the tc1100's hardware is superior to those other tablets in almost every way. The tc1100 uses a standard slate design but also includes a sturdy removable keyboard. When the keyboard is attached, it can be stowed under the main body of the tablet by twisting it around and latching it into place. We have only two complaints with this design. First, in the stowed position, the keyboard doesn't provide any protection for the screen, so you'll need to keep the tc1100 in a protective sleeve. Second, using the keyboard on a flat surface works well, but because the screen includes all the workings of the PC, it's so top-heavy that the keyboard and mouse nub are difficult to use if you're sitting with the tablet on your lap.

Aside from these minor quibbles, Compaq's tc1100 represents the pinnacle of first-gen Tablet PC design. The 10.4-inch XGA screen has the best viewing angle we've seen on a tablet yet—content looks crisp and clear from just about any vantage point—and its pressure-sensitive design makes it easier to sketch and write clearly than with other tablet PCs.

On the equipment front, the integrated 1GHz Pentium M CPU is adequate but won't break any speed records. And the mere 512MB of included memory and tiny 40GB hard drive feel a bit anemic. We dig the integrated Bluetooth, but we would have preferred an 802.11g wireless adapter instead of the integrated 802.11b card.

All in all, however, this is the tightest tablet PC we've seen to date. We're looking forward to a hardware and software revision later this year, but if you can't wait, the tc1100 is the tablet to buy.

—WILL SMITH



The Compaq tc1100 looks ungainly, but it's the most useful, versatile tablet PC we've tested to date.

MAXIMUM PC VERDICT 9

+ CUNEIFORM

Amazing viewing angles on the screen, and the most comfortable stylus we've used.

– HIEROGLYPHS

The screen is unprotected, even when the keyboard is attached. Unbalanced when used on your lap.

$2,300, www.compaq.com

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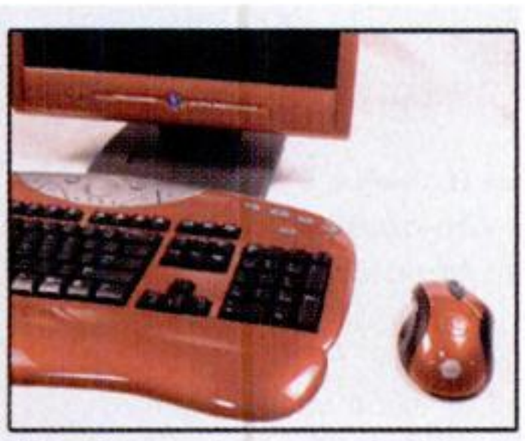

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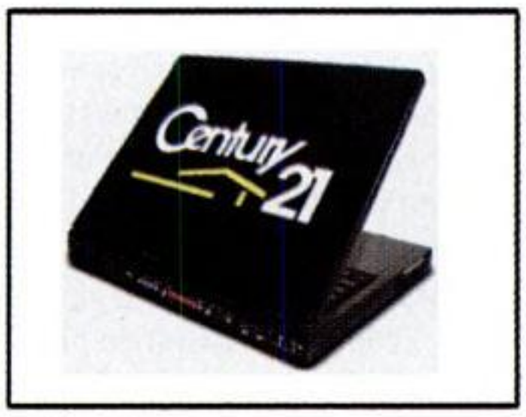

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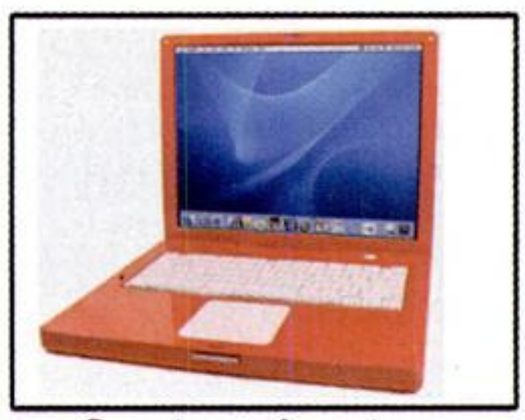

Custom Laptops

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DiskGO! 80GB USB 2.0 Hard Drive

Impressive—and attractively priced

We're usually annoyed by products that have an exclamation mark in their names, but the DiskGO! gets a pass because of its usefulness.

One thing that can be found in the Lab at any given time, aside from our usual fire-code-violating hardware orgy, is a portable 20GB hard drive. It holds all of our benchmarks, a library of drivers, a hard drive image of our zero point system, and all of our hopes and dreams. Suffice it to say, we love this little bugger. But these days, it's looking rather puny compared with the new object of our affection—Edge Memory's 80GB USB 2.0 drive, dubbed the DiskGO!.

Barely larger than an extra-long cigarette case, this storage device holds 80GB of data and is perfectly quiet thanks to its sluggish 4,200rpm spindle speed. Obviously it's not the fastest drive around, but its 2.5-inch formfactor makes it eminently portable. Contributing to the DiskGO's high degree of usability is its unique bus-power implementation. Most bus-powered drives provide an AC adapter cord in addition to a USB cable, just in case a PC's USB port can't provide enough power for the drive. The DiskGO! includes a standard 36-inch USB cable that has two connectors, like a two-headed monster. If you plug one of them in and the drive isn't getting enough power, you can just plug the other connector into another USB port, thereby doubling the power supply. In testing, we had no trouble using just the single connector for the drive, though we couldn't get it to work when plugged into some USB-powered hubs, even with both connectors attached.

The drive is sheathed in aluminum, which helps it stay and look cool. The only sign of life it emits is a green LED that flashes red during access times. There's no software included at all—it doesn't need any—but the drive does come with a swanky leather-like carrying case.

With the exception of its slow spindle speed, the 80GB DiskGO has all the features we expect in a portable drive—including a reasonable price.

—JOSH NOREM

MAXIMUM PC VERDICT 9

+ SLIM DRIVE

Small and very portable, bus-powered, large capacity.

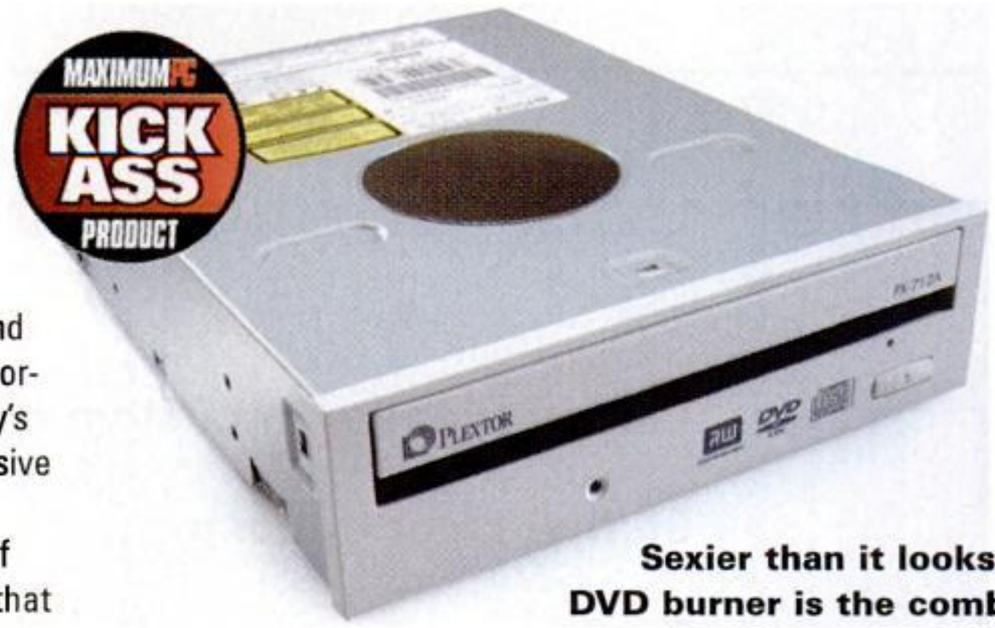
– SLIM JIM

4,200rpm spindle speed.

$290 (before $30 rebate), www.edgememory.com

PlexWriter PW-712A

Contender for "Best Optical Drive on the Planet"



Writes to:	
DVD+R	12x
DVD-R	8x
CD-R	48x
Rewrites to:	
DVD+RW	8x
DVD-RW	2x
CD-RW	24x
Reads:	
DVD-ROM	16x
CD-ROM	32x

Sexier than it looks, Plextor's 12x DVD burner is the combo DVD burner you've been dreaming about.

An optical drive from Plextor sexes up even the dullest of PCs and communicates sophistication, refinement, and ass-kicking performance. The 12x PW-712A DVD will further extend this company's reputation for top-shelf optical drives with cutting edge speeds, exclusive features and the best access times in the biz.

Let's get this one out of the way: The PW-712A burned 4.25GB of data to a 12x DVD+R disc in an unprecedented 6:25 (min:sec), and that includes about 20 seconds for caching files before the actual burn process began! A full DVD in less than six and a half minutes—can you dig it? Even better, the drive did so using media rated for 8x burning. The PlexWriter broke another record burning the same data to 8x DVD-R media in just 8:18. Rewriting is snappy but not astonishing; 4x DVD+RW media finished the test in 13:57, and though the PlexWriter supports burning DVD-RW media at 4x, the media itself was still unobtainable at press time, so burning to this format was restricted to 2x, which took 29:36 to finish the task.

If you want, or only have space for, a single optical drive, the PlexWriter PW-712A won't disappoint you. 24x CD-RW burning is supported, but more important is support for 48x CD-R burning. We filled a 700MB disc in just 2:43; that's not enough time for even a potty break.

BENCHMARKS	DVD	CD
Average data transfer (MB/sec.)	9.1	4.6
Random/full-stroke seek (ms)	95/181	91/174
Audio extraction (min:sec)	N/A	4:16
Data DVD/CD burn (min:sec)	6:25 (DVD+R)	2:43
CPU utilization (%)	12% (2x)	5% (8x)

** The data CD burn test uses the bundled applications to create a 700MB CD-R. The data DVD burn test uses the bundled applications to create a 4.25GB disc. The audio-extraction test uses a commercially stamped 74 minute audio CD.*

In addition to the fastest DVD burner in the free world, you also get a geek's toybox of software in *PlexTools Pro* which include *GigaRec*, a proprietary scheme for burning up to 1GB on an ordinary CD-R, and *SecuRec*, which password protects a disc's contents.

THE BUNDLE

Roxio *Easy CD Creator 6*
PlexTools Professional

We have just two complaints with the PW-712A: the drive's 7.5-inch length is impractical for mini-systems, and there does not appear to be any way to set the "book type" of rewriteable DVDs, a trick that may increase compatibility with some set-top DVD players.

But those are little nits. The PW-712A ought to give any system a huge ego boost.

—LOGAN DECKER

MAXIMUM PC VERDICT 9

+ GIGAREC

Fastest DVD burns money can buy. Lots of software.

– TRAIN REC

No option for setting book type on DVD-/+RW. Long formfactor.

$190, www.plextor.com

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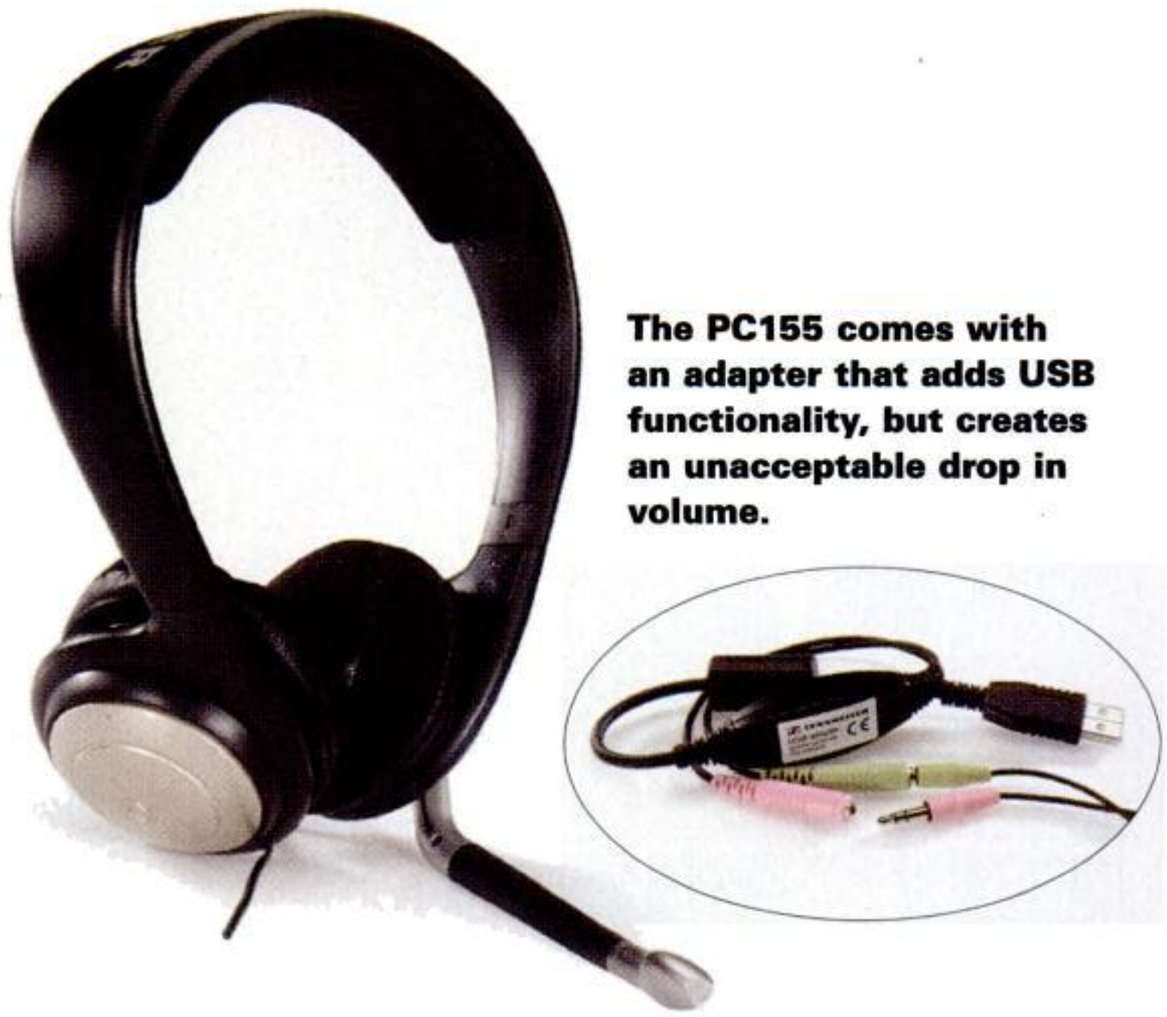
Sennheiser PC155 USB Headset

To USB or not to USB: The choice is pretty clear



The PC155 comes with an adapter that adds USB functionality, but creates an unacceptable drop in volume.

Let's play a little word association game: What's the first thing that comes to mind when we mention the name Sennheiser? If you're like us, the words "quality headphones" immediately pop into your head—which is precisely why we were more than a little excited when Sennheiser sent us its new PC155 USB headset. Given the company's award-winning reputation, we expected the PC155 to blow our socks off. After spending some quality time with the unit, we're happy to report that we have yet to locate our favorite pair of argyles.

It shouldn't come as a surprise that the most impressive aspect of the PC155 is its audio performance. We put the PC155 through a series of subjective listening tests and it performed admirably in each instance, producing clear, vibrant highs, butter-smooth mids, and gut-rumbling lows without the slightest hint of distortion or static. Similarly, the attached microphone is a winner, demonstrating excellent response and recognition while offering a good deal of adjustability. The unit also features large padded ear cushions and a fully adjustable headband that keeps the headset snug and comfortable on your head even through extended gaming sessions. As an added bonus, we were able to use the PC155 with our portable audio devices thanks to its native mini-din connectors.

Yes, you read that last part right: Even though the PC155 is marketed as a USB headset, it comes equipped with two standard 3.5mm connectors. An included adapter adds USB functionality but had such an adverse effect on the PC155's volume—which was much lower than without the adapter—it's practically worthless. Herein lies the PC155's lone fault: As a USB headset, it's mediocre. We're confused why Sennheiser would saddle the wonderful PC155 with a lousy adapter and then choose to make this feature a central selling point.

Initially, we were going to rate the PC155 solely on its merits as a USB headset, in which case, the score you see below would have been flipped upside down. But in the end, we couldn't justify penalizing such a worthwhile product for a poor marketing decision. Especially when you consider how easy the adapter is to remove, which is something we encourage everyone to do as soon as they rip the PC155 out of its package.

—TAE KIM

MAXIMUM PC VERDICT 9

+ SUPERMAN

Impressive audio, comfortable to wear, and compatible with portable audio devices.

– CLARK KENT

Woeful USB adapter adversely affects volume level.

$140, www.sennheiserusa.com

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Asus A8V Deluxe Motherboard

One new Socket 939 to rule them all

There are two types of PC upgraders: those who get so excited by new technology that they jump in with both feet, and those who carefully measure their options before settling on an upgrade path. Asus' A8V Deluxe mobo should appeal to both.

The A8V marks the debut of Socket 939, which finally standardizes the interface for both the Athlon 64 and Athlon 64 FX processors. This socket change is more than just the removal of a pin. A tweaked memory controller in the CPU allows the Athlon 64 FX to finally shed its requirement for slower and more expensive registered RAM. (For more info on Socket 939 and the future of Socket 754 and Socket 940 see In The Lab on page 56.)

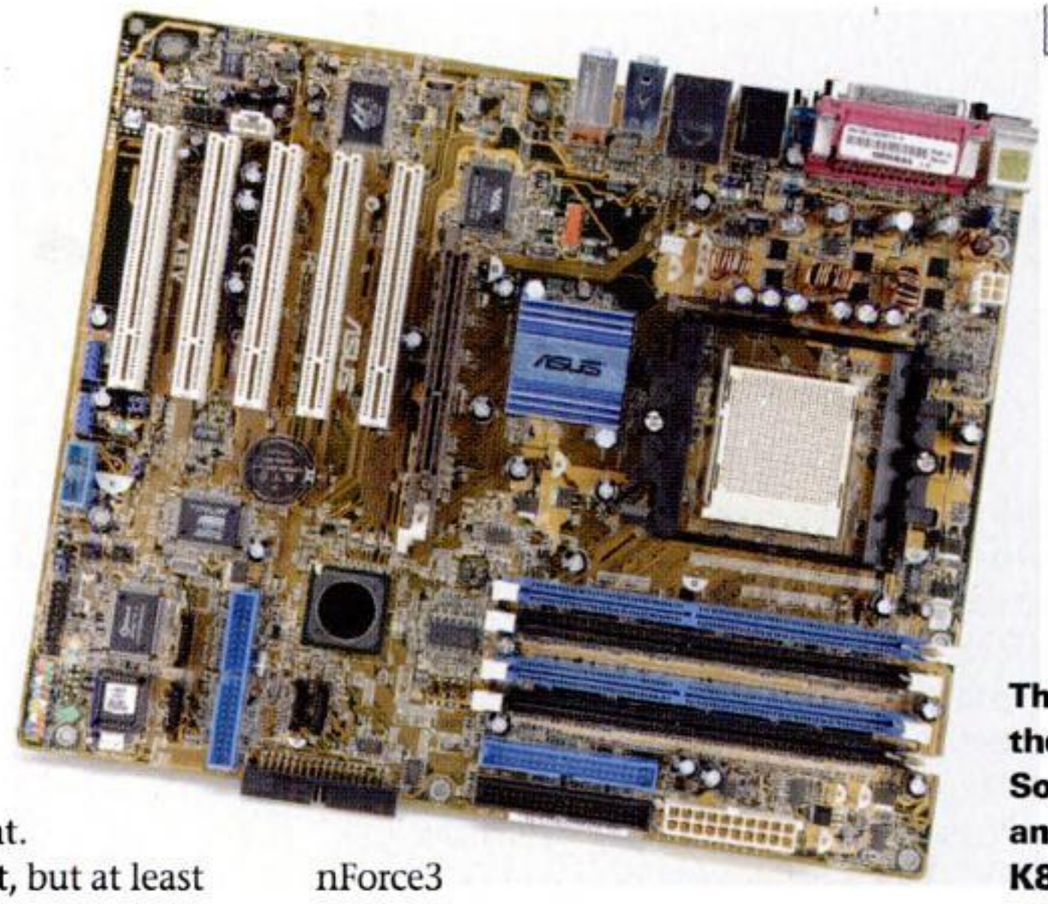
The VIA K8T800 Pro chipset that powers the A8V is similar to its non-Pro kin but adds support for an asynchronous bus mode that locks down the AGP and PCI buses when the CPU is overclocked. Enthusiasts should appreciate this, as it prevents crashes that originate from, say, an unintentionally overclocked soundcard.

Another noteworthy feature is full support for a 1GHz, or 8GB/s, link between the CPU and chipset. Older Athlon 64 boards support just 800MHz, or sometimes even 600MHz. VIA has also increased the communication speeds between the north and south bridge to 1GB/s from 533MB/s of the non-Pro chipset. This amounts to greater performance headroom that may come in handy down the road.

Chipset improvements aren't the A8V's only bragging rights. There are two FireWire 400 ports, eight High-Speed USB 2.0 ports, and a Wi-Fi option that turns the machine into a soft access point. Audio is strictly 16-bit, but at least it's eight-channel thanks to the new RealTek ALC850 chip. For storage, you get three PATA and four SATA ports, but sadly the VIA chipset still doesn't support native SATA devices. You'll still need a floppy drive and "F6" drivers to install Windows XP.

The A8V/K8T800 Pro combo also falls short by not including a high-speed port for Gigabit Ethernet—its Marvell Gigabit chip is ensconced in the mobo's PCI. This means that if you're running a SCSI controller, soundcard, or other PCI device that sucks up bandwidth, your LAN performance will suffer.

Fortunately, the A8V has the goods where it counts: performance. We configured the A8V with a Socket 939 FX-53 CPU, an ATI Radeon 9800 Pro videocard, a Western Digital 2500JB drive, and 1GB of Corsair DDR400 RAM, and compared it with our similarly outfitted benchmark motherboard—an Asus SK8N using the older FX-53. This isolated the variables so that with both chips clocked at 2.4GHz, the only differences were the chipset (the SK8N uses the older nForce3 Pro) and RAM (the older FX-53 requires registered RAM.)



The A8V marks the debut of Socket 939 and uses VIA's K8T800 Pro—a combination that's faster than the competition.

Clock for clock, the A8V beat its older sibling in every benchmark by a 2 to 6 percent margin. Much of the performance boost can be attributed to the elimination of registered RAM, but some of it also comes from the VIA chipset and drivers. Regardless, the A8V is clearly the fastest Athlon 64 FX board we've reviewed to date.

The lack of a few key features such as a high-speed interface for LAN and a true native SATA mode make its chipset less sophisticated than the nForce3 250Gb, but the A8V is nonetheless the fastest board. The big question for upgraders is this: Do you take the plunge now or wait for the PCI Express version of this mobo, which should arrive at the end of summer? If you have/need/want to do it now, the A8V is certainly a sound choice.

—GORDON MAH UNG

MAXIMUM PC VERDICT 9

+ RPG 7

It's fast, and Socket 939 stabilizes upgrade options.

− M72

Competing nForce3 chipset packs more features.

$152 ($130 w/o Wi-Fi), www.asus.com

DARE TO COMPARE: ATHON 64 MOTHERBOARDS

Mainboard	Asus SK8N	Asus A8V
Chipset	nForce3 150	K8T800 Pro
CPU	Athlon 64 FX-53	Athlon 64 FX-53
Clock speed	2.4GHz	2.4GHz
Socket	Socket 940	Socket 939
L2 cache	1MB	1MB
RAM mode	Dual	Dual
Quake III "Normal" Four	484	**505**
Sandra RAM Composite	5685	**5939**
3DMark 2001 SE	20188	**21226**
AquaMark 3 CPU Test	10355	**10645**
3DMark 2003 CPU Test	836	**847**
UT2003 Fly By	329.9	**347**
SYSmark 2004 Overall	184	**188**

Best scores are bolded.

SPECS

Chipset	VIA K8T800
CPU support	All current Socket 939 Athlon 64 and Athlon 64 FX CPUs
RAM	4GB MAX, DDR200-DDR400
PCI slots	Five 32-bit 5-volt/3.3 volt PCI slots
AGP support	1.5 volt signaling AGP 4x/8x cards
SATA	Four SATA (two in south bridge, two from Promise)
PATA	Three PATA (two in south bridge, one from Promise controller)
RAID	0, 1, JBOD
LAN	Marvell 88E8001 Gigabit/Fast Ethernet
Audio	8-channel RealTek ALC850
FireWire	VIA VT6307 IEEE1394
Other	802.11g option, audio jack sensing, virtual cable testing, AMD Cool 'n' Quiet technology

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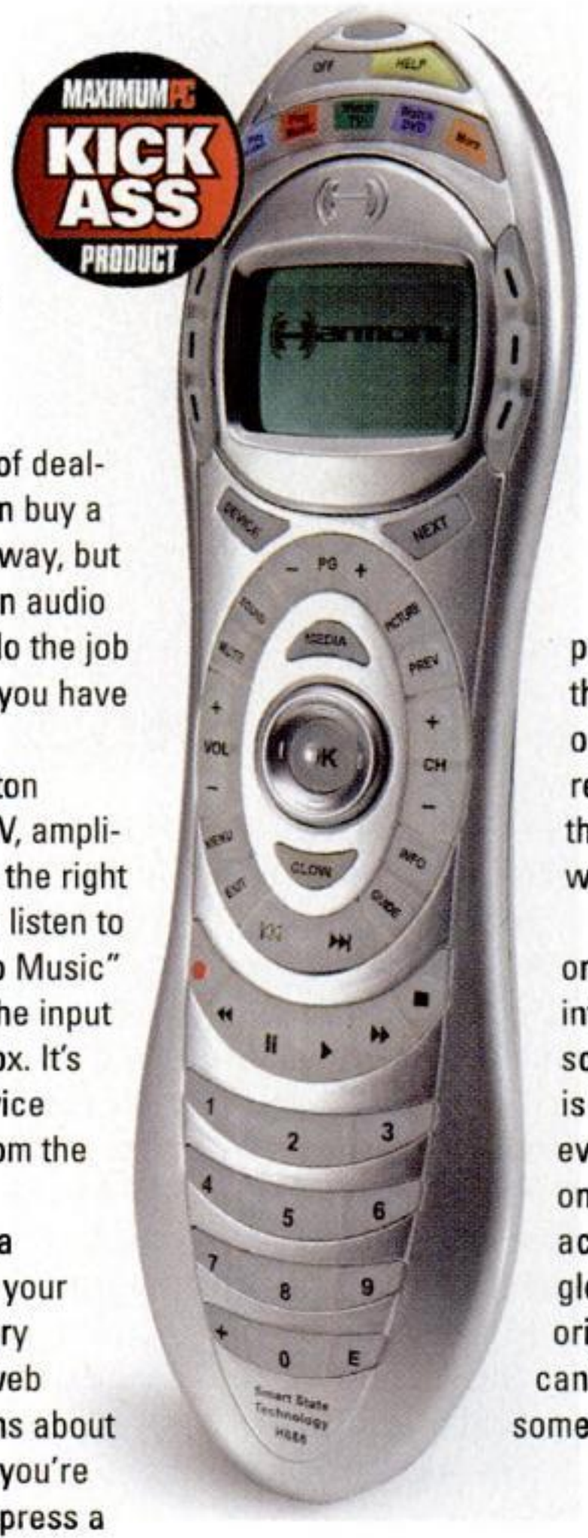
Harmony H688

Holy cow! This is the universal remote we've been waiting for



It's shaped like the standard TiVo remote, but the Harmony H688 is the ultimate PC programmable universal remote control.

Anyone with a home theater rig knows the pain of dealing with multiple remote controls. Sure, you can buy a universal remote and hide most of the others away, but a time will inevitably arise when you need to switch an audio input from analog to digital and you won't be able to do the job without the remote you packed away. Unless, that is, you have the Harmony H688.

Here's how the Harmony works: You press the button labeled "Watch TV" and the Harmony turns on your TV, amplifier, and satellite or cable box, switches everything to the right inputs, and changes to your favorite channel. Want to listen to an MP3 from your streaming box? Press the "Listen to Music" button and the Harmony will turn off your TV, switch the input on your amplifier, and activate your MP3 streaming box. It's got a multitude of buttons, so you can control any device that's made its way into your entertainment center, from the DVD player to the gaming consoles.

Configuring the Harmony is reasonably simple for a device that does so much. You connect the remote to your PC using the included USB cable, install the proprietary software, and point your browser to a configuration web site. At the web site, you're asked a series of questions about the devices in your home entertainment rig, and then you're assisted in deciding exactly what happens when you press a particular task button—like "Watch TV" or "Listen to Music." In the unlikely event Harmony doesn't know the infrared codes for one of your devices, the remote can be made to learn the old remote's codes. We thoroughly configured our Harmony in less than an hour, and haven't needed to touch another remote since we started using it a few months ago.

What if you need to use a command that isn't mapped to one of the H688's many buttons? You can use the remote's integrated LCD screen—which is backlit just like every other button on the device—to access every single command your original remote can perform, and some that it can't.

—WILL SMITH

MAXIMUM PC VERDICT 9

+ UNIVERSAL REMOTE

Get rid of every other remote control you own. The H688 can replace them all.

– PILE O' REMOTES

It's not as comfortable for PVR-type use as the TiVo remote, but we'd rather have the convenience of a single handset.

$250, www.harmonyremote.com

Pantone ColorPlus

Get accurate display colors on the cheap

If you've ever wondered why a digital image that sparkled on your monitor looks like crap in print or when viewed on the web, it's time you learned about color calibration. Like zeroing the sights on a gun or setting the zero point of a bathroom scale, calibrating your monitor ensures that color reproduction is as accurate as possible.

ColorPlus facilitates such fine-tuning. The package includes a hardware color sensor that attaches by suction to your CRT. For LCD users, ColorPlus ships with an adapter to avoid damaging the delicate surface of your flat panel.

The *ColorPlus* software runs you through a five-minute setup that creates an International Color Consortium profile for the monitor that can be used with such applications as Adobe's *Photoshop.* The package also ships with a "starter edition" of Adobe's *Album 2.0.* While usable for basic photo editing, the starter edition is stripped of features; it also becomes annoying in record time by encouraging you to upgrade to the full version at every opportunity. Feh.

Setup was a snap, but we did stumble at one phase where we misunderstood the step for setting the monitor's brightness. We admit the error was partially our fault, but it reinforced our instincts that the instructions and directions could be clearer and more helpful across the board. Setting up, installing, and running the initial calibration is painless, but ColorPlus leaves you hanging after that. It lacks detailed documentation on how to use the profiles with *Photoshop,* and is missing other basic FAQ information that would help newbies get the most out of the calibration package.

If you print photographs, calibrating your monitor is just one part of the equation—it won't control or help you adjust your printer's output. But to get high-quality prints, you must have confidence that the image you see on your display is an accurate representation of the image file's data. The ColorPlus system can give you this confidence—and cheaply. It's certainly less frustrating than trying to eyeball your way to perfection.

The ColorPlus sensor attaches to your monitor and allows you to easily calibrate your display.

—GORDON MAH UNG

MAXIMUM PC VERDICT 8

+ RADIOHEAD

Low-cost hardware, better than guessing.

– CRACKHEAD

Needs better documentation.

$100, www.pantone.com

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Hitman: Contracts

The bald-headed assassin is back for more of the same

Don't tell our therapist, but we're big fans of the *Hitman* franchise. The thrill we felt after stealthily taking out assigned targets in the flawed yet memorable *Hitman: Codename 47* and *Hitman 2: Silent Assassin* remains unparalleled. Sure, we've thoroughly enjoyed recent stealth-based games such as *Splinter Cell,* but nothing has been able to deliver the same visceral excitement that comes from slipping into the shoes of a ruthless, bald-headed killer for hire. So imagine our excitement when *Hitman: Contracts,* the latest chapter in the saga, crept into our offices. We hoped that the return of Agent 47 would satisfy our craving for stealthy shenanigans, but much to the dismay of our inner assassin, this *Hitman* fails to deliver the killer blow.

The biggest problem is that *Contracts* doesn't improve upon the formula established in earlier titles in any meaningful way. From the graphics engine to the game mechanics, every aspect of the experience looks and feels as though it's been lifted straight from the last game. This makes the experience feel more like an overpriced expansion add-on than a full-blown sequel. Compounding this flaw is the fact that several missions from the first game have been recycled and served up again like yesterday's meatloaf. While this makes sense given the game's story line—which involves a series of flashbacks that revisit Agent 47's sordid past—it seems unfair. And while the flashback motif is well implemented, the lack of a unifying story arc ultimately makes for a disjointed gaming experience.

Despite these complaints, we were able to wring some enjoyable moments out of *Hitman: Contracts.* Fans of the franchise will ease into the game like a pair of old sneakers, albeit a pair they've already outgrown. At the very least, this will whet the appetites of wannabe assassins as they await the fourth *Hitman* title, which has tentatively been scheduled for release sometime next year.

—TAE KIM

Just when we thought things couldn't get any worse, the Health Department showed up and started handing out citations.

MAXIMUM PC VERDICT 7

+ SILENT AND DEADLY
Doesn't stray too far from the established formula.

– SILENT BUT DEADLY
It's nothing we haven't seen before.

$50, www.hitmancontracts.com

Thief: Deadly Shadows

MAXIMUM PC KICK ASS PRODUCT

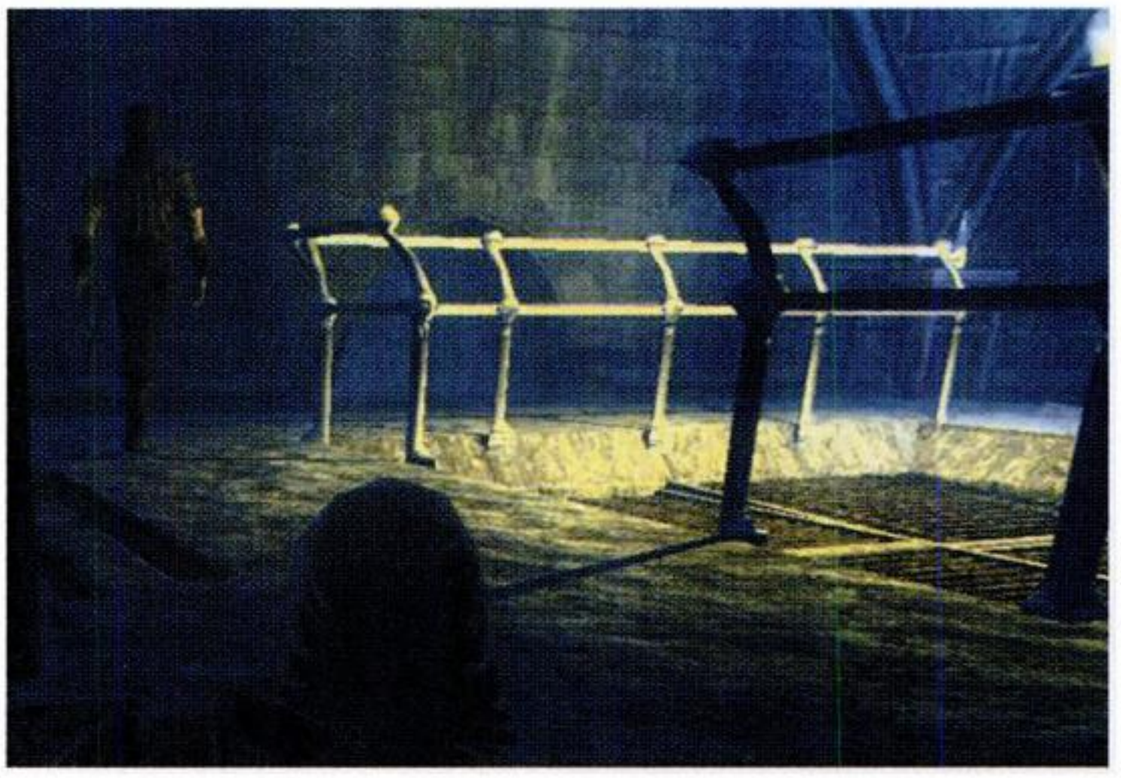
This game really sneaks up on you

The city is a harsh mistress, full of scoundrels who will roll you for a handful of gold coins. Refreshingly, in *Thief: Deadly Shadows*, you're one of the scoundrels. You play as Garrett, a master thief living off the involuntary generosity of others. You sneak and steal you way through castles and catacombs, and in the process, uncover the truth behind a plot to unleash a dark age upon a world that's already pretty darn dark.

Gameplay has remained relatively unchanged from the first two *Thief* games. You sneak around in the shadows and avoid guards while getting from point A to treasure B. He still has most of his toys, including a trusty blackjack for clubbing unsuspecting guards, and a bow with an arsenal of trick arrows for snuffing torches or spreading sound-muffling moss.

Unlike the two previous installments, however, *Deadly Shadows* allows for relatively open-ended exploration of the game's city, aptly dubbed "the City." Between missions, you can walk about freely pick-pocketing noblemen, robbing homes, and avoiding the law. Small side quests and hints pointing to great wealth can be found from the City's myriad NPCs. Fences and stores tucked away in alleys give you a safe place to sell your ill-gotten goods and replenish your equipment. It's hardly a sprawling metropolis, but this open-ended urban environment adds pleasant depth to a series that was previously completely linear.

Deadly Shadows is hardly a horror game, but its tense and moody atmosphere literally made us jump during various levels. In most missions you'll explore buildings and avoid human guards, but in some, you'll face creepy supernatural enemies. One of these more unconventional missions has Garrett breaking into an abandoned orphanage turned insane asylum. The subtly twisted architecture, erratic lighting, and creepy audio track produce one of the most terrifying sensations we've had in all our gaming experiences.



The game's hero goes clubbing every night it seems, much like the *Maximum PC* staff in its younger days. Here we see him laying in wait for an unsuspecing guard.

Though it isn't for everyone—the slow pace will turn off gamers more into straight-ahead action—*Deadly Shadows* is absolutely essential for stealth-game fans. If you're looking for a first-person alternative to gunning down anything that moves, this is for you.

—E. WILL GREENWALD

MAXIMUM PC VERDICT 9

+ LUPIN III
Tense and well-honed gameplay and a great plot. One mission is unbelievably scary.

– LUPUS
Bizarre rag-doll physics, and the game style is an acquired taste.

$40, www.thief3.com

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City of Heroes

Create your own superhero in this uniquely entertaining MMORPG

***City of Heroes* is to other MMORPGs what comic books are to novels. Not nearly as deep, but much easier to dive into.**

We've always wanted to be a superhero, the type of do-gooder who can fly above the clouds, scale tall buildings, and terrify criminals in dark alleys while our cape flows menacingly behind us. With *City of Heroes,* we can finally perform all these feats and more—without any fear that videos of us pretending to be a superhero will wind up on the Internet.

This comic book–oriented massively multiplayer game is a superhero sim of sorts. You choose the type of hero you want to be and then set out to fight crime and vanquish evil in a metropolis called Paragon City. We appreciate that *City of Heroes* isn't complex and that it doesn't try to be. You simply create your crime-fighting alter ego—you can be anyone from a cybernetically enhanced martial artist to a mutant telepathic healer—outfit him, her, or it with a variety of accessories, and then enter the city and start putting an end to the evildoers.

Paragon City is full of life, both law-abiding and crime-loving. A variety of missions are available for you to choose from. In some, you'll hunt down gang members in alleys; in others, you'll battle super villains in their lairs. Unfortunately, most of the missions boil down to the same beat-up-the-bad-guys formula. Don't get us wrong, we love beating up bad guys. But while such straightforward action makes *City of Heroes* more accessible and entertaining than most massively multiplayer games, a little more complexity would hold our interest longer.

The controls are extremely intuitive and use the familiar WASD and space bar combo we love so much. In addition to the standard kick and punch fighting moves, each superhero has an array of special powers and access to temporary power-ups called Inspirations. These added abilities can turn the tide in battle by healing you, enhancing your strength, or recharging your energy.

Unfortunately, as the game stands now, you can only fight alongside your human compadres, not against them. This is frustrating—we want to be able to prove our hero is the best. We've read reports that *City of Villains,* the upcoming add-on to this game, will allow such head-to-head play.

—E. WILL GREENWALD

MAXIMUM PC VERDICT 9

+ BATMAN

Be your own superhero. Tons of character options. Huge cityscapes.

– AQUAMAN

Lacks the depth of other MMORPGs. You can only fight the AI. No capes!

$50, www.cityofheroes.com

Lineage II: The Chaotic Chronicle

An attractive MMORPG cookie that's cut from the same dough as most others

***Lineage II* looks good, but expect the same fights over and over again.**

With *Lineage II,* developer NCSoft follows the standard point-and-click, hack-and-slash formula of other MMORPGs like *Everquest* and *Dark Age of Camelot* so religiously that although the game is hard to fault, it feels completely uninspiring. In fact, *Lineage II's* only glaring flaw is a lack of innovation. Early on, players find themselves settling into the classic MMORPG treadmill: fight monsters, get experience, get gold, level up, buy equipment. Repeat. It's a tried-and-true formula, but it feels a little long in the tooth.

Persistent players are promised a deeper and richer role-playing experience, where they can upgrade their class, craft items, form clans, siege castles, and even raise their own dragon. But when you're only at level 8 and you've just killed your five-thousandth orc, you'll wonder if it's even worth it.

Lineage II includes all of the standard massively multiplayer staples. Player-vs-player combat is supported, but it's policed by a "karma" system that turns excessive player-killers into vulnerable fugitives. Players can trade items with other players, which creates a simple *Everquest*-like economy. Equipment drops are extremely rare, though, and as of this review, the game's economy reflected this, with extremely high prices for all but the most basic items. New players are forced to choose between Fighter and Mystic classes, but can eventually customize their classes with specialized skills and class-evolving quests.

The graphics appear colorful, lush, and well beyond our expectations of an online-only RPG. In keeping with others of the genre, the world is large, there are many different enemies to fight and items to use, and the sound effects and music are well-produced.

Lineage II has great potential, and rewards hardcore players who stick with it long enough to reap the benefits at higher levels, but non-fanatics of the genre will probably have a hard time slogging through it. Hopefully, future revisions will take this into consideration and make the early stages more interesting.

—E. WILL GREENWALD

MAXIMUM PC VERDICT 7

+ FIREBALL

Great look, solid gameplay, and lots of potential for hardcore characters.

– MAGIC MISSILE

Tedious treadmill-style play, and limited in lower levels.

$50, www.lineage2.com

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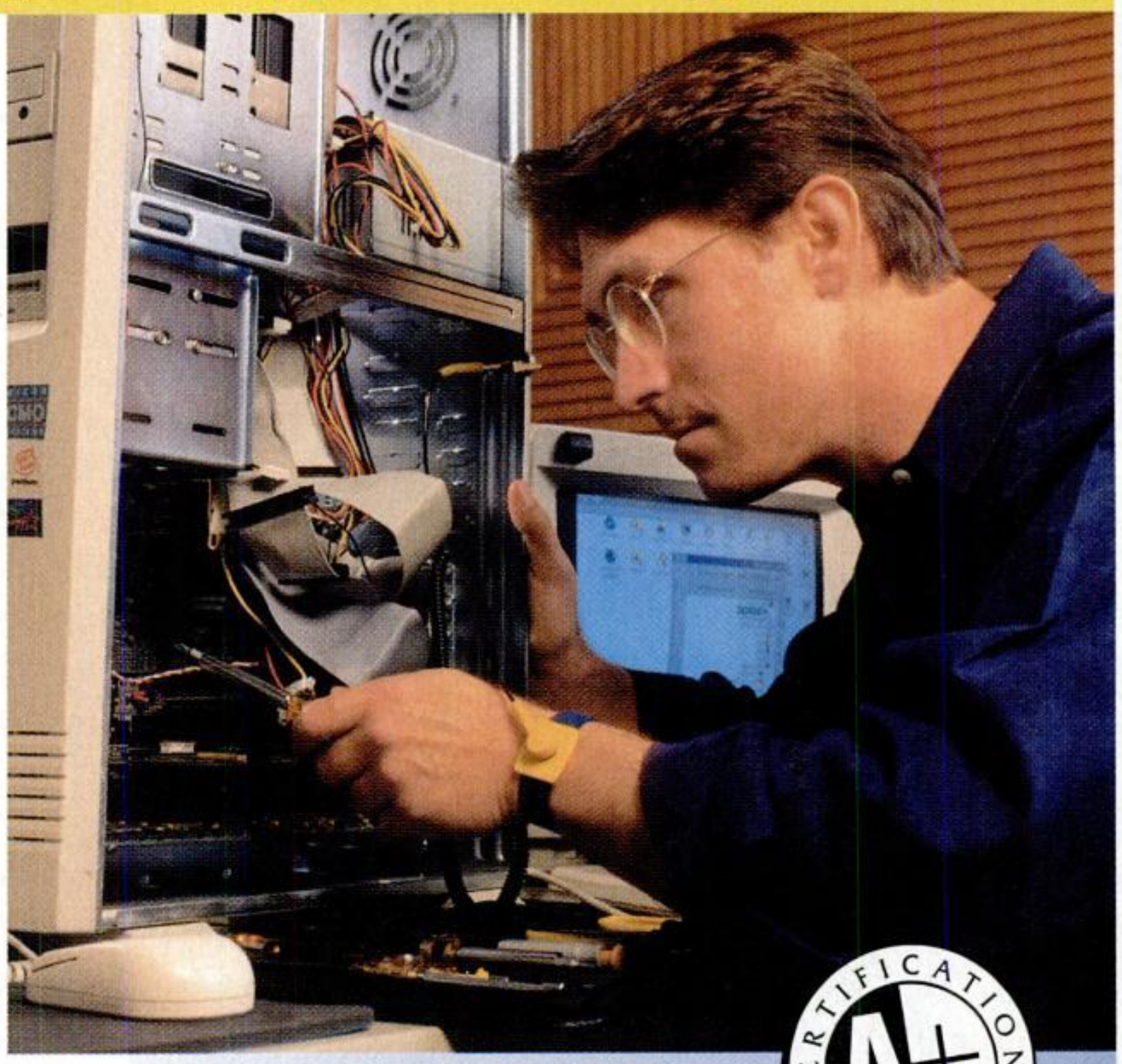

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MAXIMUM PC AUGUST 2004 REVIEW VERDICT: 9

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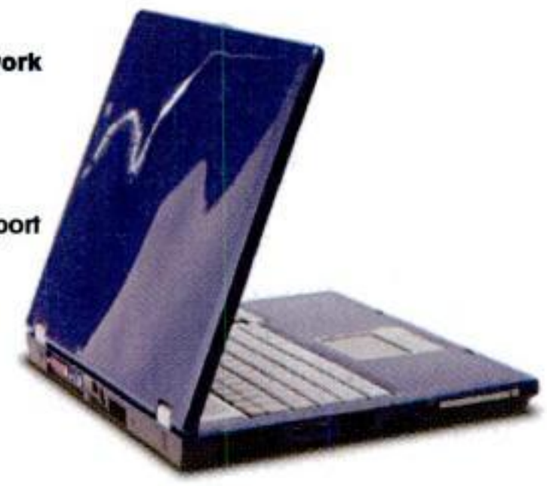

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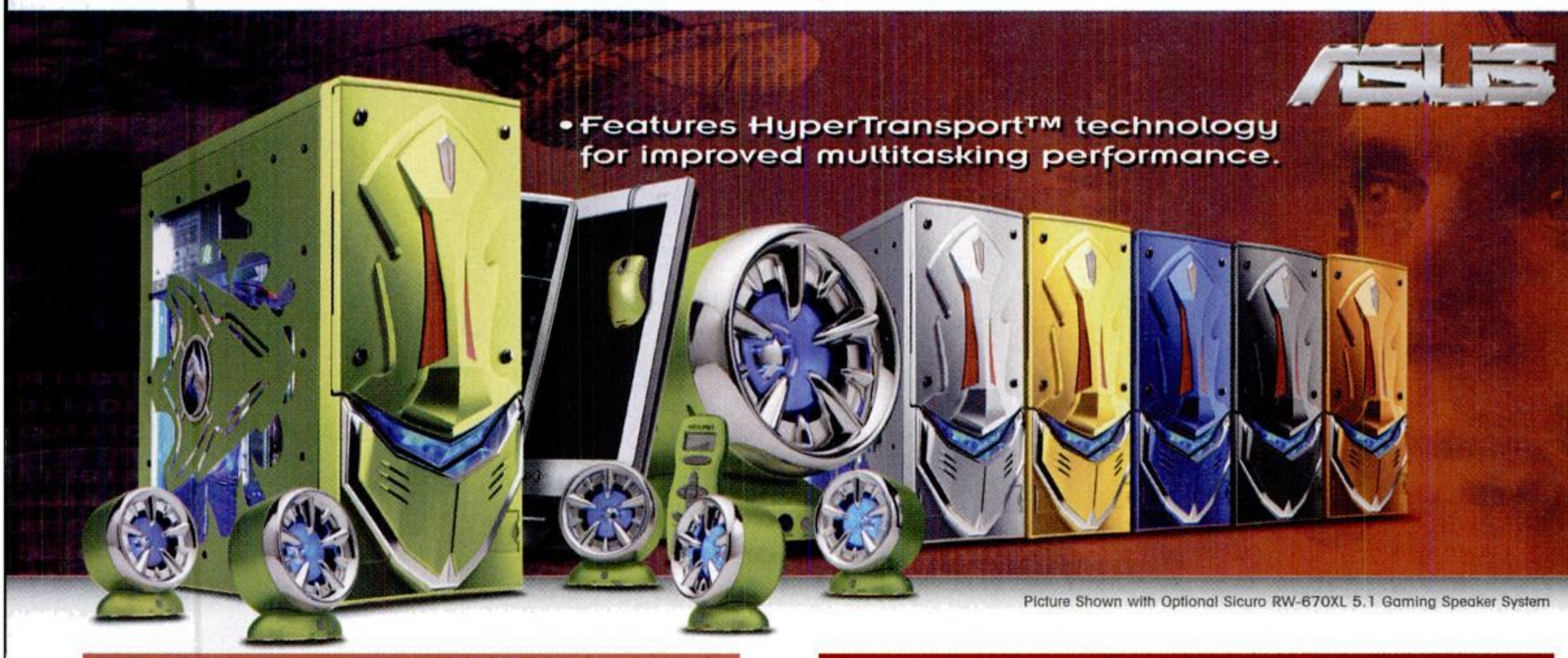

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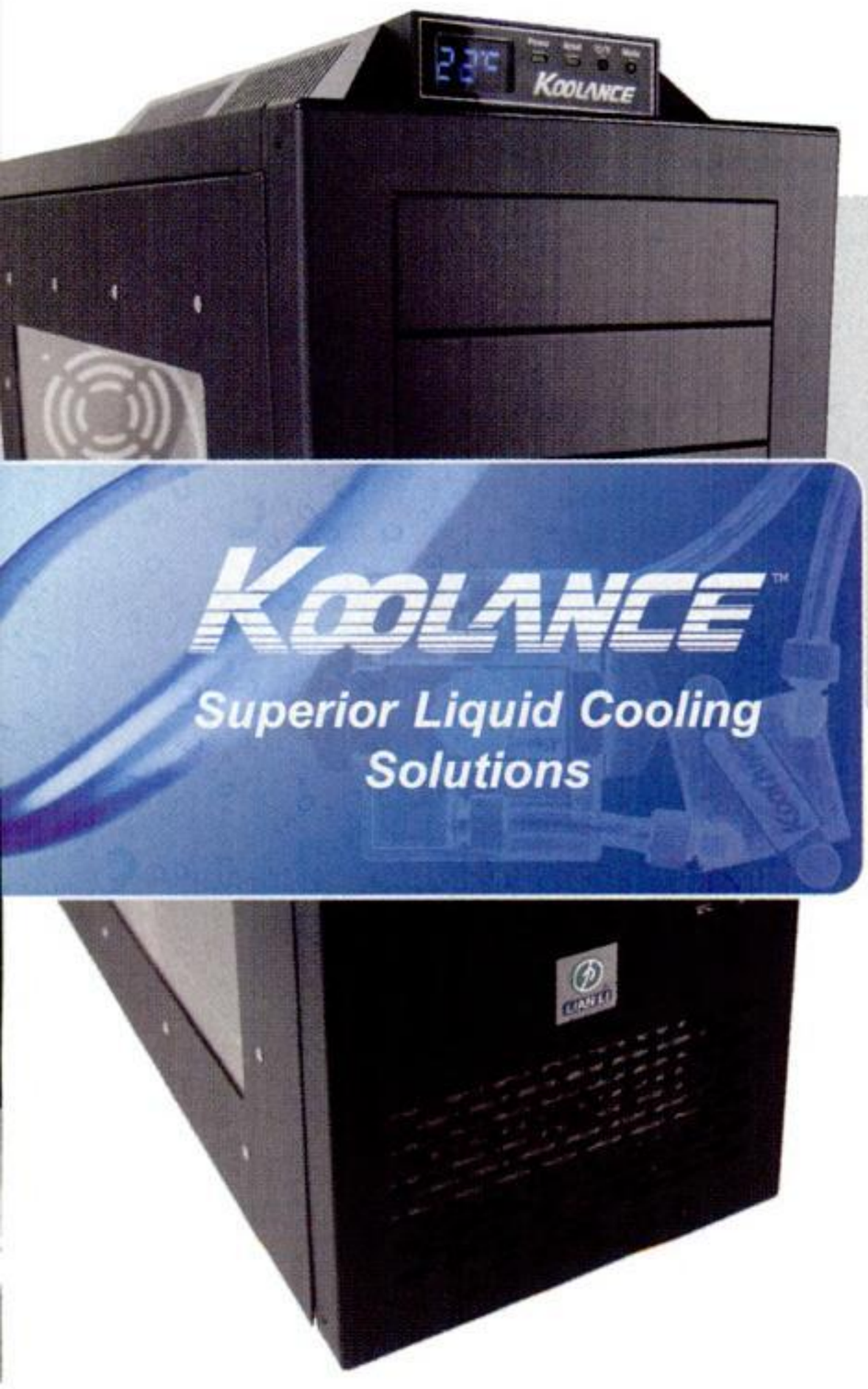

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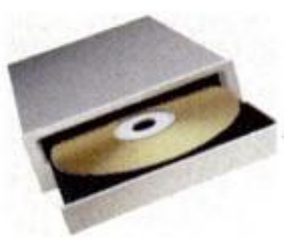

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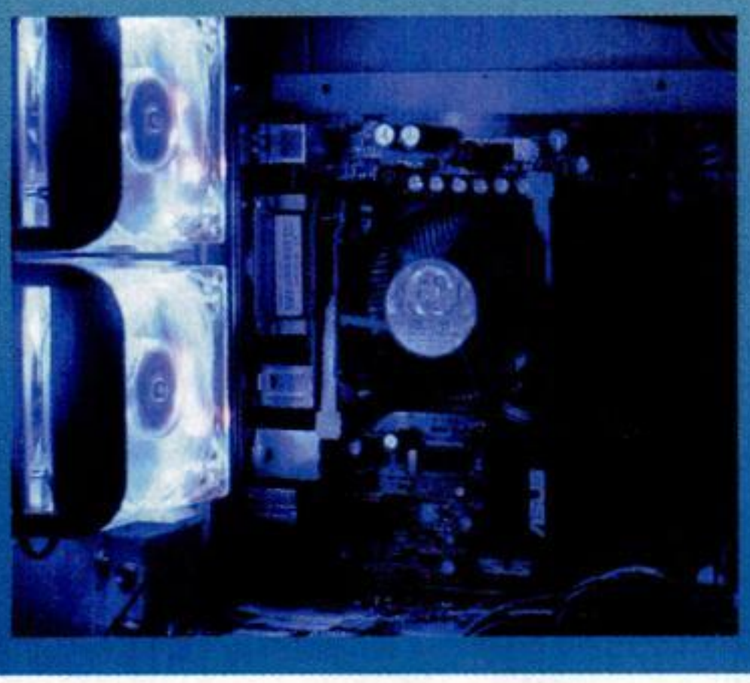

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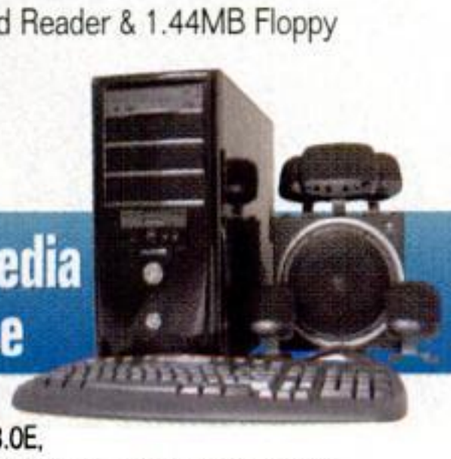

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- NEC Gamer's 16mS 17" LCD (add $499)
- NEC 15" LCD (add $359)
- NEC 19" Monitor FE990 (add $289)

Intel Pentium 4 Processor @ 3.0 GHz $1199
Intel Pentium 4 Processor @ 3.2 GHz $1259
Intel Pentium 4 Processor @ 3.4 GHz $1409

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- Intel® Pentium® 4 2.8E, 800Mhz FSB, 1MB L2 Cache, HT Retail CPU with 3yr Intel® warrantee
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- ATI® Radeon™ 9200SE with 128MB RAM
- Mid Tower Case with 350Watt PSU
- 80GB 7200RPM Hard Drive
- 16x DVD & 52x24x52x CDRW Combo Drive
- Integrated 10/100 LAN & 56K V.92 Modem
- 1.44MB Floppy & Stereo Speakers
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- Microsoft® Windows® XP Home, SP1
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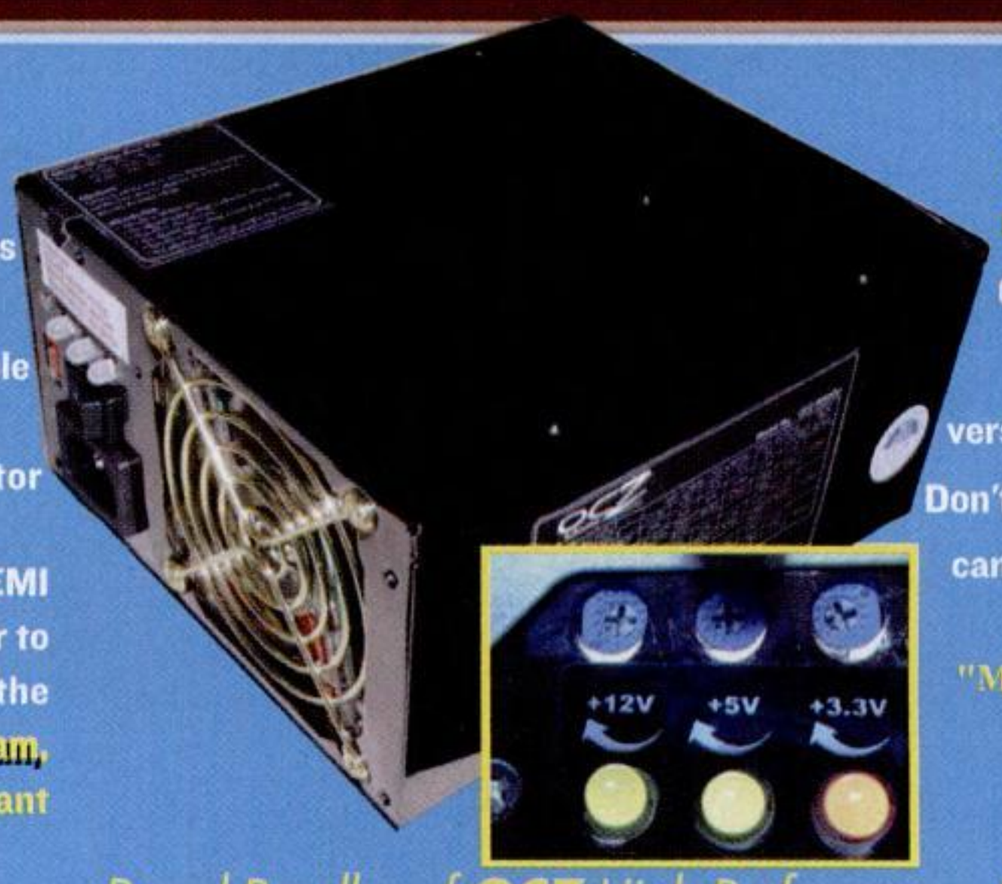

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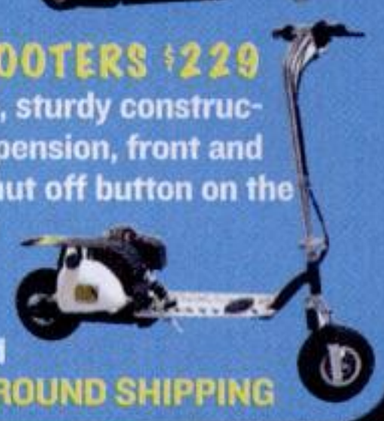

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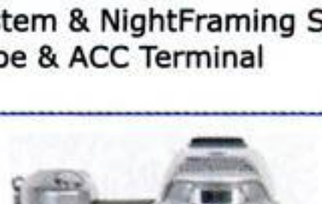

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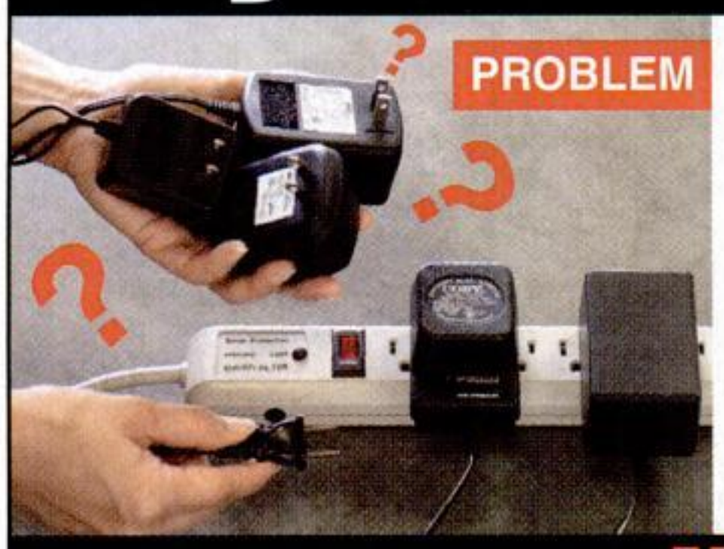

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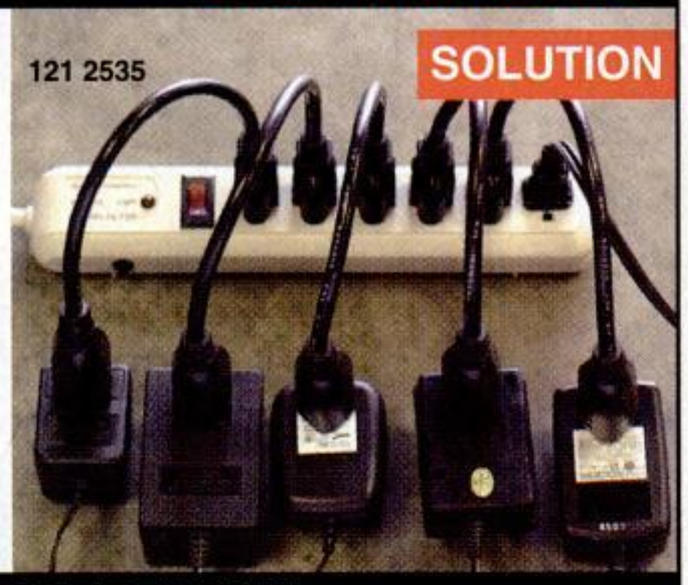

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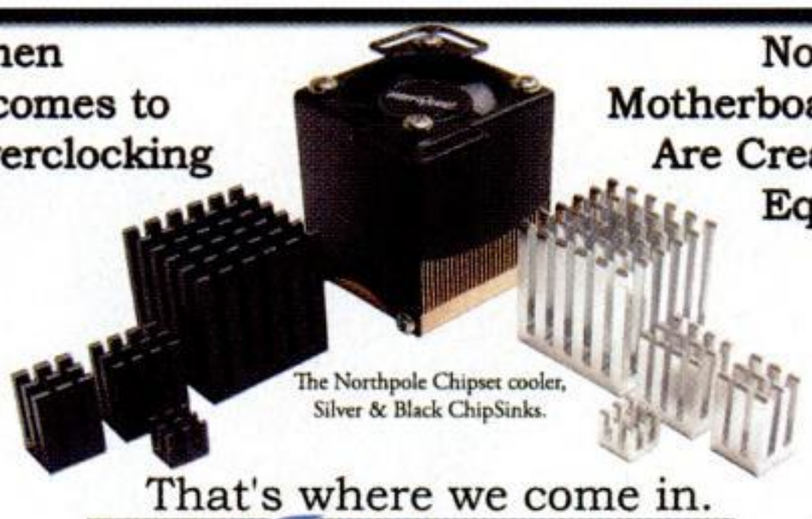

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MAXIMUMPC Rig of the Month

A name can be so telling. Just askTroy Fryfogle, creator of August's Rig of the Month. "Moby refers to the whale... and represents my drive to build the perfect modded system just as Ahab obsessed over his white whale," he says. Seriously, the quest was no small matter. Just ask Moby 1, the custom-crafted PC Fryfogle summarily gutted in pursuit of his dream. Luckily, Moby 2 turned out to be everything Fryfogle hoped for (if only Ahab had been so lucky!).

The craftsmanship speaks of a practiced hand. After all, a first-timer would hardly know all the tricks it takes to cram this much componentry and extraneous ornamentation into a standard full-tower case without the inside looking like R2D2's sick bag. Large custom windows on both the side and top of the case don't lie.

As for the rig's performance: "It runs like a scalded dog," says Fryfogle.

THIS MONTH: Troy Fryfogle's Moby 2

Fryfogle actually scaled back his use of lights with Moby 2, and went strictly LED. As he puts it, "LEDs not only keep the case lighting consistent but they last forever, and if they die it's nothing cataclysmic; they normally go without so much as a whimper and at worst a 'pop'."

There's plenty to see beneath the top window, including the active LCD screen when it's tucked safely in its resting place.

All the drives were "stealthed" to match the front of the case, as were the faceplates for the Zalman fan controller and the Matrix Orbital LCD. Handles were added to the top for easier transport.

The mod that garners the most attention is the pop-out LCD, which can be used as either an extension of the primary desktop, or to display television programming via the PC's TV tuner card.

Fryfogle meticulously planned the machine's layout, "everything from the case lighting and wiring down to the airflow pattern/fan position." A Lian Li PC-6077 houses the whole kit and caboodle and an Antec 480W blue LED PSU provides the juice.

If you have a contender for Rig of the Month, e-mail **input@maximumpc.com** with pics and a brief write-up.

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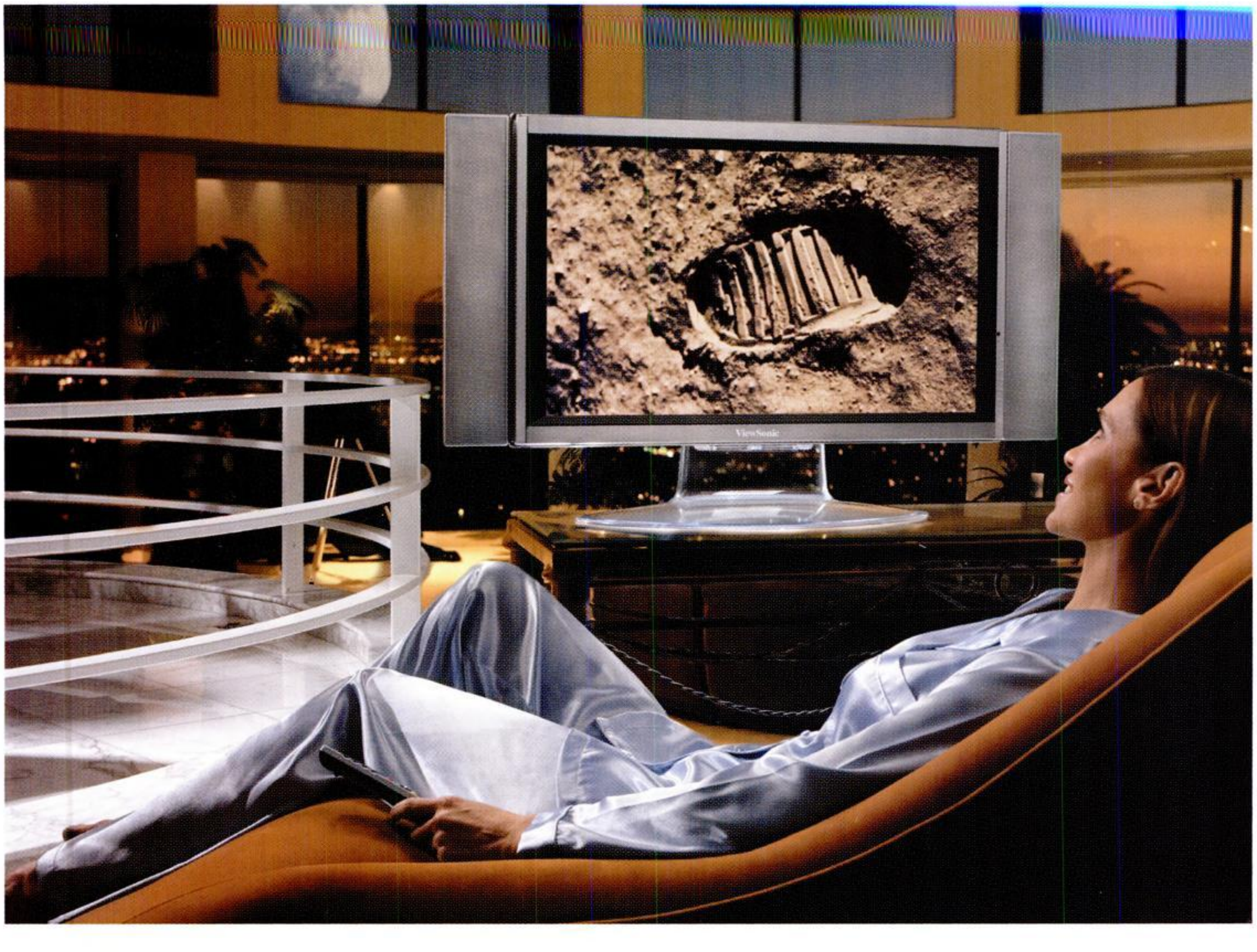

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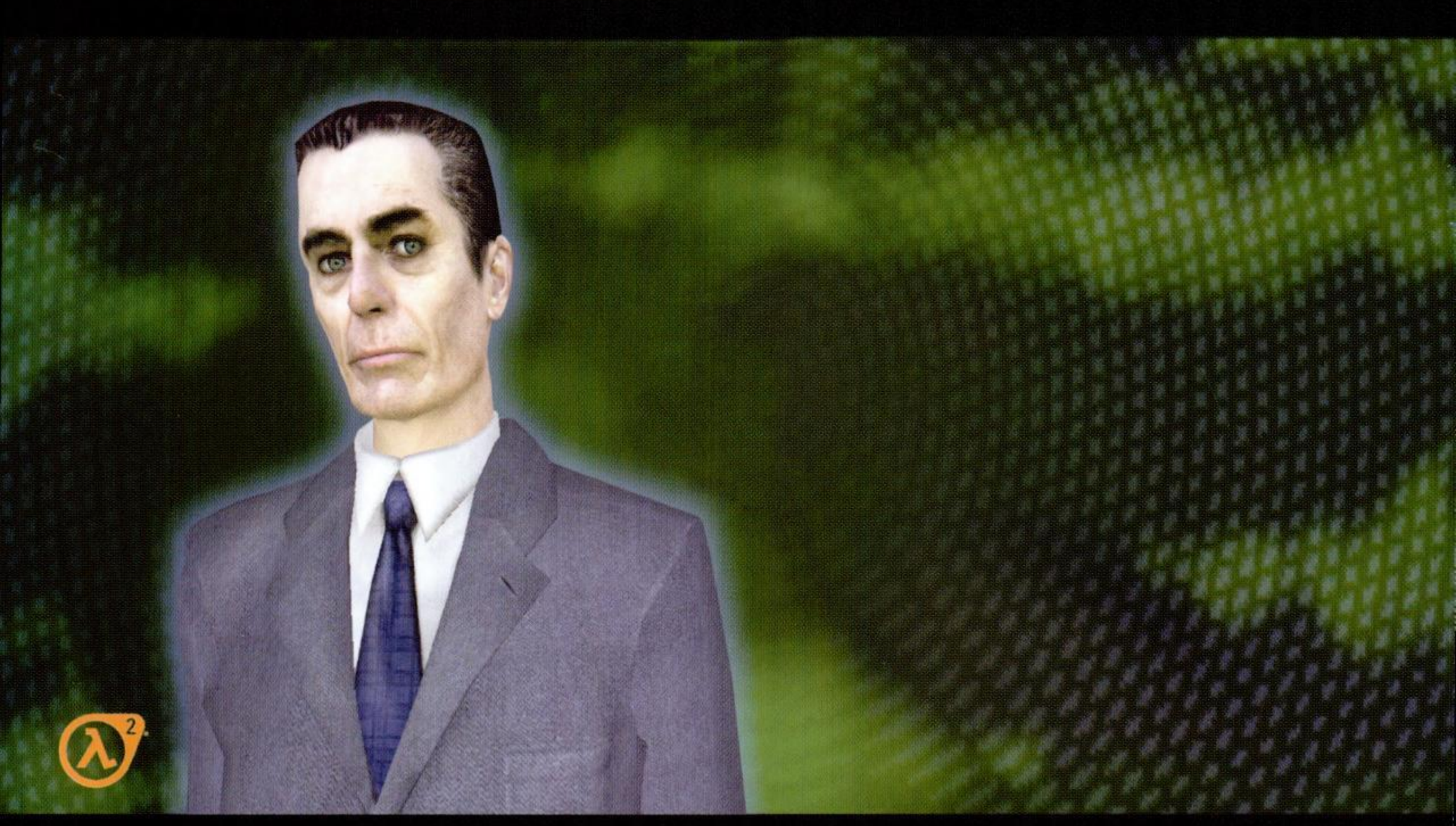

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